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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of:)	
)	
Implementation of the Local Competition Provisions in the Telecommunications Act) of 1996)	CC Docket No. 96-98
)	
Interconnection between Local Exchange Carriers and Commercial Mobile Radio Service Providers)	CC Docket No. 95-185
)	

COMMENTS OF MCI WORLDCOM, INC.

I. INTRODUCTION

MCI WorldCom, Inc. (AMCI WorldCom \equiv), pursuant to the Second Further Notice of Proposed Rulemaking (ASecond FNPRM \equiv) in the above-captioned dockets,^{1/} hereby submits its Comments.^{1/} In the Second FNPRM, the Commission seeks comment on how, in view of the Supreme Court=s ruling in AT&T Corp. v. Iowa Utilities Board, 119 S. Ct. 721 (1999), the

^{1/} Second Further Notice of Proposed Rulemaking, In re Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket 96-98, FCC 99-97 (rel. Apr. 16, 1999) (ASecond FNPRM \equiv).

^{2/} To assist the Commission=s review of these Comments, sections of this document are coded with the number that refers to the paragraph in the FNPRM to which MCI WorldCom responds.

Commission should implement the unbundling standards in §§ 251(d)(2) and 251(c)(3) of the Telecommunications Act of 1996.^{1/}

^{3/} Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (The 1996 Act or the Act).

In Iowa Utilities Board, the Supreme Court upheld all but one of the regulations contained in the Commission's Local Competition Order.^{4/} It vacated the Commission's Rule 319, 47 C.F.R. § 51.319 (1997), on the narrow ground that the Commission did not adequately consider the "necessary and impair" standards when it gave blanket access to network elements in Rule 319. 119 S. Ct. at 735. Although the Court took issue with none of the many policy judgments that informed the Commission's rulemaking, it found that in defining "impaired" and of "necessary" it failed to provide some limiting standard, rationally related to the goals of the Act. Id. at 734. It therefore remanded the matter to the Commission to determine on a rational basis which network elements must be made available, taking into account the objectives of the Act, and giving some substance to the "necessary" and "impaired" requirements. Id. at 736.

In this proceeding to reconsider the nature of the Act's unbundling requirements, the Commission therefore should, as the Court directed, begin by considering the objectives of the Act. Id. In enacting the 1996 Act, Congress decided to end the status quo monopoly provision of local telephone service, including the States' protection of the Incumbent Local Exchange Carriers' (ILECs) legal monopolies. Congress did not simply remove those legal barriers to competition, leaving only the antitrust laws to determine whether and when competitive markets would develop. Instead, Congress adopted an aggressively pro-competitive policy and enacted specific market-opening measures in an effort to jump-start local competition. In particular, Congress required the Commission promptly to fashion rules implementing three critical

^{4/} First Report and Order, In re Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, 11 F.C.C.R. 15499 (1996) (A Local Competition Order).

substantive requirements: (1) allowing competitors to interconnect their networks with the monopolists' networks; (2) to re-sell the monopolists' services; (3) and to lease the component parts of their network whenever competitors would be impaired without the ability to lease those elements (or whenever the leasing of proprietary elements was necessary for the competitor). The Act's leasing provisions, were thus designed to promote competitive outcomes, not simply to deter anticompetitive behavior. A purely deterrent rule would have been superfluous: existing antitrust laws accomplish that purpose, and Congress expressly incorporated those antitrust protections into the Act. Pub. L. No. 104-104, § 601, 110 Stat. 143 (Feb. 8, 1996) reprinted at 47 U.S.C.A. § 152 Hist. and Stat. Notes (West Supp. 1998).

In framing unbundling rules that fulfill the legislative purpose of promoting rapid competition, the Commission now has the benefit of three years of experience with the Act. That experience powerfully endorses Congress' judgment that the combination of preempting state laws preserving local monopolies and antitrust enforcement together are not sufficient to open local markets promptly. Through legal challenges, real and fabricated technical difficulties, and foot-dragging, the ILECs have succeeded in delaying application of the Act's leasing provisions. The result has been the very state of affairs Congress legislated to avoid. Despite the elimination of legal barriers to entry, serious competition has developed at a snail's pace, and only in a very few business markets. Uniform, bright-line, and comprehensive rules for unbundling network elements are, necessary to overcome mechanical and procedural hurdles to competition.

In articulating a limiting standard for determining which network elements should be unbundled, the Commission must take into account sources for those elements other than the ILEC network. Iowa Util. Bd., 119 S. Ct. at 734. The record in this proceeding will establish

that new entrants continue to require access to a core group of ILEC elements on a national basis because no alternate sources provide adequate substitutes. ILEC elements are needed because new entrants must interconnect with ILEC networks, or because there is not yet a wholesale market for those elements and the costs and delay inherent in self-provisioning are more than sufficient to frustrate the development of local competition. Equally important, competitors without access to certain ILEC elements are frequently impaired even where they could obtain the same elements standing alone from other sources because there is no cost-effective or technically feasible method to integrate the separately obtained element with those monopoly elements of the ILEC network (most significantly the loop) upon which competitors still must rely. Therefore, even where these alternate sources theoretically exist, CLECs will be impaired without access to ILEC elements unless the alternate sources are interchangeable with the ILEC source, i.e., unless it is as feasible to use the alternate source as it is to use the ILEC source.

In sum, in the absence of national rules requiring the unbundling of a core group of network elements on a uniform basis, the ability of new entrants to compete will be materially diminished such that their efforts to provide local service will be impaired for purposes of § 251(d)(2) of the Act.

II. DEFINING NETWORK ELEMENTS

A. The Commission Should Identify UNEs on a Nationwide Basis.

[14, 38] MCI WorldCom agrees with the Commission's tentative conclusion that it should continue to identify a minimum set of network elements that must be unbundled on a nationwide basis.³ Second FNPRM & 14. The Commission's judgment in the Local Competition Order that such rules are necessary is sound and is consistent with the Supreme

Court=s decision. See Local Competition Order && 53-62, 226-248.^{1/} The Supreme Court faulted the Commission for failing to define Aimpair≡ and Anecessary≡ in a meaningful way, and in particular required the Commission to consider Athe availability of elements outside the network.≡ Iowa Utils. Bd., 119 S. Ct. at 736. It did not, however, suggest what conclusion the Commission should reach after redefining those terms and undertaking that inquiry. Critically, the Supreme Court did not take issue with the findings and conclusions in the Local Competition Order that considered and determined the need for elements defined on a national basis.

First, such national rules are clearly contemplated by the statute. 47 U.S.C. § 251(d)(2) specifies that the Commission shall Adetermin[e] what network elements should be made available for purposes of subsection (c)(3).≡ If Congress intended local unbundling rules, or a rule which did not specify precisely Awhat network elements should be made available,≡ it would not have charged the federal agency with coming up with a list. In addition, the § 271 competitive checklist identifies core network elements that Congress believed to be crucial to the goal of opening local markets to competition under any set of market conditions. 47 U.S.C. § 271(c)(2)(B). Congress evidently concluded that such core network elements were properly identified on a national basis. The Commission must retain for itself the role of identifying network elements in keeping with the Anational policy framework≡ envisioned by Congress. Joint Managers= Statement, H.R. Conf. Rep. 104-458, at 1 (1996).

^{5/} AWe find nothing in the Supreme Court=s decision that calls into question our decision to establish minimum national unbundling requirements.≡ Second FNPRM & 14.

Second, only national unbundled element rules can provide uniformity and predictability in the marketplace that new entrants need to formulate and execute national business plans to offer local telephone service.^{1/} As the Commission properly found in the Local Competition Order, CLECs must be able to take advantage of economies of scale in order to compete effectively with the incumbent LECs. See Local Competition Order && 56, 61, 242.^{1/} In every State, new entrants can offer ubiquitous local service to all classes of consumers only if they have access to a core group of unbundled network elements.^{1/} New entrants that wish to offer service throughout a particular region or nationwide are impaired in any sense of that term without access to a core set of nationally available network elements.^{1/} Just as the existence of non-uniform BOC Operations Support Systems (OSS) impairs provisioning of service for a national carrier such as MCI WorldCom,^{1/} so too, a lack of nationally-available elements will impair MCI WorldCom in its efforts to offer nationwide mass markets local telephone service.^{1/} By providing uniformity and

6/ See Declaration of Judith R. Levine and Ronald J. McMurtrie (ALevine/McMurtrie Decl.≡) (attached hereto as Tab 1) & 4.

7/ See Declaration of John E. Kwoka, Jr. (AKwoka Decl.≡) (attached hereto as Tab 2); Declaration of Mark T. Bryant (ABryant Decl.≡) (attached hereto as Tab 3) && 10, 13.

8/ After three years, it is clear that resale alone will not create ubiquitous competition. Even though technically it is a simpler method of market entry than unbundling, and even though it has been the only practical method of entry available in some jurisdictions, resale remains a very limited service entry vehicle. That potential resellers no longer face substantial non-price barriers to entry from some ILECs in some states but nevertheless do not enter the market suggests that resale pricing frequently is an insuperable barrier to entry. See Kwoka Decl., Tab 2, & 19.

9/ See Levine/McMurtrie Decl., Tab 1, && 3-6.

10/ The Commission has found in a related context that the lack of uniform, industry standard interfaces creates a barrier to entry. Memorandum Opinion and Order, In the Applications of NYNEX Corp. Transferor, and Bell Atlantic Corp. Transferee for Consent to Transfer Control of NYNEX Corp. and Its Subsidiaries, 12 F.C.C.R. 19985, & 195 (1997) (AMerger Order≡).

11/ See Levine/McMurtrie Decl., Tab 1, && 6-9, 13-16.

predictability for CLECs= business plans, national unbundling rules will significantly lower barriers to entry for CLECs and increase the benefits of entry for consumers.^{12/}

^{12/} See Kwoka Decl., Tab 2, && 37-38.

Regulation that would leave elements to be unbundled on a customer-by-customer, facility-by-facility, or state-by-state basis would necessarily result in protracted and repetitive regulatory litigation, involving state regulators and the courts in endless disputes between CLECs and ILECs over the proper application of unbundling standards.^{13/} The ability of CLECs to compete already has been and will continue to be severely impaired if individual CLECs were forced constantly to ask regulators and courts to resolve such disputes. See Local Competition Order & 242. Moreover, a state-by-state approach, in addition to sacrificing the uniformity of national rules, would produce rules that fail to reflect actual market conditions. As the Commission has previously concluded, differences in market conditions do not coincide with state boundaries. See id., & 59.^{14/}

^{13/} See, e.g., Levine/McMurtrie Decl., Tab 1 & 8.

^{14/} Kwoka Decl., Tab 2, & 37.

The heavy costs of a state-by-state approach to making unbundling rules have been illustrated by the experience of the past several years. In its Local Competition Order, the Commission declined to order nationwide unbundling of certain elements; including subloop elements and dark fiber, leaving those unbundling decisions to the States. See id., §§ 391, 450.

The ILECs then predictably refused to provide access to those network elements (or to provide access on reasonable and nondiscriminatory terms), resulting in dozens of state commission arbitrations and subsequent federal lawsuits around the country as CLECs attempted to gain access.^{15/} That litigation still is not concluded, and regardless of the substance of the various state

^{15/} Decided cases in which the district courts have considered dark fiber or subloop unbundling claims (or both) include: MCI Telecommunications Corp. v. GTE Northwest, Inc., Civ. No. 97-1687-JE, 1999 WL 151039 (D. Or. Mar. 17, 1999); US West Communications, Inc. v. Thoms, No. 4-97-CV-70082 (S.D. Iowa Apr. 19, 1999); US West Communications, Inc. v. Garvey, No. Civ. 97-913 ADM/AJB (D. Minn. Mar. 31, 1999); MCI Telecommunications Corp. v. BellSouth Telecommunications, Inc., No. 97-76, 1999 WL 166183 (E.D. Ky. Mar. 11, 1999); MCI v. Bell-Atlantic, 36 F. Supp. 2d 419 (D.D.C. 1999); US West Communications, Inc. v. AT&T Corp., Nos. A1-97-085, 082 (D.N.D. Jan. 8, 1999); US West Communications, Inc. v. AT&T Communications of the Pacific Northwest, Inc., 31 F. Supp. 2d 839, (D. Or. 1998); GTE California Inc. v. Conlon, No. C97-1757SI (N.D. Cal. Sept. 29, 1998); MCI Telecommunications

commission rulings, MCI still does not have access to dark fiber. Moreover, the outcomes have been inconsistent from one state to another, for reasons having nothing to do with geographic or market differences in the States. The result has been that CLECs have been unable to formulate any national or regional strategies that rely on use of dark fiber or subloop elements. This is not a model the Commission should adopt for all elements.

Corp. v. Pacific Bell, No. C97-0670SI (N.D. Cal. Sept. 29, 1998); Southwestern Bell Telephone Co. v. AT&T Communications of the Southwest, Inc., No. A97-CA-132SS, 1998 WL 657717 (W.D. Tex. Aug. 31, 1998); MCI Telecommunications Corp. v. US West Communications, Inc., No. C-97-1508R (W.D. Wash. July 21, 1998); US West Communications, Inc. v. AT&T Communications of the Pacific Northwest, No. C-97-1320R (W.D. Wash. July 21, 1998); MCImetro Access Transmission Services, Inc. v. GTE Northwest, Inc., No. C-97742-WD (W.D. Wash. July 7, 1998); MCI Telecommunications Corp. v. Bell Atlantic-Virginia, Inc., No. 3:97CV629 (E.D. Va. July 1, 1998); MCI Telecommunications Corp. v. BellSouth Telecommunications, Inc., 7 F. Supp. 2d 674 (E.D.N.C. 1998).

The ILECs have consistently opposed any requirement that they lease elements of their network at cost-based rates, arguing that leasing would on the one hand discourage competitors from provisioning their own facilities, and, on the other hand, would create a disincentive for the ILECs to make capital improvements and invest in innovative technologies. CLECs, however, have an overwhelming incentive to avoid reliance on ILEC facilities whenever possible. MCI WorldCom, for example, self-provisions as many network elements as is feasible to minimize reliance on others, and in particular seeks to avoid reliance upon dominant incumbents who have every reason to undermine MCI WorldCom's ability to compete.^{16/} Indeed, the ILECs have this argument backwards. Only by being allowed to lease facilities will MCI WorldCom generate sufficient revenues and customers to warrant the construction of new facilities. In the real world, leasing is not a deterrent to facilities construction; it is a necessary precondition to such construction.^{17/} Because the availability of unbundled network elements at cost-based rates cannot outweigh CLECs' strong interest in controlling their own networks, there is little danger that national unbundling rules will slow the development of facilities-based competition. To the contrary, no CLEC will gamble its viability by relying on the long-term cooperation of its dominant rival. See infra pp. 26-27. The proof of this is the recent experience in New York. In that state leasing at competitive rates is possible, and MCI WorldCom is able to offer competitive Mass Market Service.^{18/} That has not deferred facilities build out. To the contrary, there may be

^{16/} See Kwoka Decl., Tab 2, & 20, 29, 35; Levine/McMurtrie Decl., Tab 1, & 16; SWBT, 1998 WL 657717, at *11; Local Competition Order & 685.

^{17/} Levine/McMurtrie Decl., Tab 1, & 17.

^{18/} Id & 17 (citing number of lines).

more CLEC facilities in New York than in any other state. Declaration of John Wimmer, (AWimmer Decl.≡) (attached hereto as Tab 4) & 31.

Nor will a uniform leasing rules have any effect on ILEC investment in innovative technology. In the first place, most of the innovation and high-risk investment that takes place in the telecommunications industry is undertaken by equipment vendors, and not by the ILECs who are their customers. And when ILECs do make innovative changes in their network, they typically do so on a limited, experimental basis, and not throughout their network. They do not usually invest large sums of money in high-risk enterprises, so there is little chance that such investment could be deterred by a rule that facilitated leasing. Finally, the Commission=s TELRIC methodology calls for state commissions to apply a risk-adjusted return on capital as part of the TELRIC rate. Thus, the lease price appropriately rewards investment risk, and there is no reason to believe leasing would discourage high-risk investment.^{19/}

Consistent with the Supreme Court=s mandate, this Commission must, of course, articulate and apply a definition of § 251(d)(2)=s impairment standard that takes into account sources of network elements other than the ILEC networks. Such a definition is properly based on a nationwide assessment of market entry conditions that considers whether, to what extent, and where alternative sources of network elements are available. The record evidence submitted by MCI WorldCom and in this proceeding generally will establish that, with negligible exceptions nationwide, there is no wholesale market for network elements, that CLEC self-provisioning is currently prohibitively costly and time-consuming, and that where either of these alternatives exist in theory, the lack of connectivity and interchangeability of elements renders their use

^{19/} See Kwoka Decl., Tab 2, & 25.

impracticable. See, e.g., infra, Declaration of Dennis Herold, Joseph Stockhausen, and Roy Lathrop (AHerold/Stockhausen/Lathrop Decl.≡) (attached hereto as Tab 5) && 6-12.

Levine/McMurtrie Decl., Tab 1, && 9, 15. In view of nationwide barriers to entry for the provision of mass market services, combined with the barriers that would be created by requiring case-by-case, state-by-state determinations as to unbundling, the Commission should enact national unbundling rules.

Indeed, based on such a factual record, the only sensible rule is one that can be applied to the majority of cases in which there is no alternative to the ILECs= elements. There are no doubt sporadic instances in which a particular CLEC in a particular location seeks access to a particular element even though it could as a practical matter, self-provision. But the Commission is charged with devising a sensible regulation that can be applied with the least amount of regulatory involvement and risk of litigation. A rule that generally leads to the correct result and does so without any delay or confusion is far superior to a rule designed to respond to the infrequent case and will inevitably will lead to extensive delay and uncertainty in all cases. The record and the Act powerfully support the Commission=s tentative conclusion that it should define a minimum set of elements that must be unbundled on a nationwide basis.

B. The Commission Should Establish a Process For Modifications to Its Unbundling Requirements.

[11, 36-39] Because any definition of Aimpair≡ and Anecessary≡ must take into account the availability of elements outside of the ILECs= networks, the Commission=s core list of unbundled elements may evolve over time. The Commission should continue to Arecognize that it is vital that we reexamine our rules over time in order to reflect developments in the dynamic telecommunications industry,≡ Local Competition Order & 58, and adopt a mechanism for modifying the list of unbundled network elements. However, for the same reasons that the Commission should create a uniform national list of unbundled elements, that modification mechanism should not operate on a case-by-case or state-by-state basis. Rather, the Commission itself should reexamine, after a fixed period of time, its decisions to require particular network elements to be unbundled nationwide.

Section 251(d)(2) requires the Commission to consider its statutory standards -- as well as the other relevant factors -- before deciding that a network element should no longer be subject to unbundling requirements. See Iowa Utils. Bd., 119 S. Ct. at 736 (A[Section 251(d)(2)] requires the Commission to determine on a rational basis which network elements must be made available, taking into account the objectives of the Act and giving some substance to the `necessary= and `impair= requirements.≡). In addition, § 10 of the Act expressly requires the Commission to enforce the unbundling requirements of § 251(c) Auntil it determines that those requirements have been fully implemented.≡ 47 U.S.C. § 160(d) (limiting forbearance authority of § 160(a)) (emphasis added). Neither a Asunset≡ provision, in which unbundling obligations would be eliminated without further action of the Commission, nor a delegation of this determination to the

States, which would also obviate Commission action, can be reconciled with the Act's language, its pro-competitive purpose, or the realities of the marketplace.

First, no evidence on the record suggests that the Commission can predict today with any accuracy that conditions will have changed sufficiently at some point in the future such that a particular unbundling obligation will no longer be necessary. Neither should the Commission establish a mechanism that eliminates unbundling obligations upon the occurrence of certain events defined in advance. A conditional sunset rule that would apply only at some future date would necessarily be so complex as to be administratively unworkable and would not satisfy the Commission's duties under § 251(d)(2).^{1/} An absolute sunset provision would create precisely the wrong incentives: in the absence of Commission review, an ILEC is free to slow roll compliance with the Act's procompetitive requirements and still get the benefit of automatic sunset. The Commission simply must at a future date review its unbundling assessments here and make a determination as to whether suggested alterations comply with the Act.

^{20/} Attempting to define such conditions in advance will not create new incentives for the ILECs to facilitate competition. ILECs already have the incentive of interLATA entry to spur their efforts to facilitate interconnection and provide access to elements on nondiscriminatory terms. Giving carriers the opportunity not to participate in a wholesale market after one has developed will not act as a further incentive. In a world in which there is a wholesale market for an element, in which wholesale prices have been driven close to cost by competitive forces, and in which there are no barriers to CLECs' self-provisioning of the element, the ILECs surely would wish to be part of that market.

Second, the Commission may not delegate review of its unbundling requirements to the States. To do so would be to give individual states the ability to opt out of national unbundling rules promulgated by the Commission, contradicting § 251(d)(2) and § 10 and undermining the national framework Congress intended. See supra p. 5. Once a national framework has been put in place by the Commission, it should only be modified, if necessary, by the Commission on a nationwide basis, not eroded in piecemeal fashion by individual States acting independently.^{1/} Review of the unbundling requirements by the Commission after a fixed period of time better serves the purposes of the Act than any process of *ad hoc* review by the States at the request of incumbent LECs. A process in which reconsideration of unbundling requirements can be initiated by incumbents before state commissions would result in constant and duplicative regulatory litigation, plunging CLECs into uncertainty and anticompetitive delay.

The period of time before a reevaluation by the Commission of the unbundling rules should be sufficiently long to enable CLECs to plan their business strategies with reasonable certainty and to ensure that regulatory litigation does not bring competition to a halt just as it is getting started. MCI WorldCom proposes that a period of approximately three years would

^{21/} Of course, States are free to take further pro-competitive steps beyond the actions of this Commission by unbundling elements in addition to those unbundled in this proceeding. See Local Competition Order & 244. See infra Tab 9 for MCIWorldCom suggested text for replacement of the Commission's Rule 51.317.

provide the necessary certainty while allowing a reasonable opportunity for modification of the rules in accordance with changing industry conditions. Kwoka Decl., Tab 2, & 38.^{1/}

Because such a reexamination would relate to modification of Commission rules then in effect, the presumption should be that existing unbundling requirements will remain unaffected unless it is affirmatively shown that changed conditions warrant removal of a network element from the existing list. This approach is consistent with the Act=s goal of promoting local competition throughout the nation for all classes of customers, as it ensures that all unbundling obligations remain in place until they are no longer needed. A presumption of continued unbundling is also appropriate because, as discussed above, the risks associated with leaving a particular unbundling obligation in place too long are less than the risks associated with removing such an obligation prematurely.

If the Commission determines that the right to access to a particular network element should be withdrawn or that some conditional rule has become appropriate, it should expressly acknowledge that unbundling obligations contained in existing interconnection agreements will nevertheless remain in effect until those agreements expire. See MCI Telecommunications Corp. v. GTE Northwest, Inc., No. 97-1687-JE, slip op. at 9 (D. Or. Apr. 21, 1999). By making it clear that modifications to its rules are prospective only, and that existing interconnection obligations

^{22/} After its initial review, the Commission could schedule subsequent reviews to coincide with its § 11(a)(2) biennial public interest review of all of its regulations. See 47 U.S.C. § 161. That provision -- requiring a review of the Commission=s regulations for compliance with a public interest standard -- schedules those assessments for even numbered years. Plainly, a reassessment of the unbundling rules for compliance with the Act will be premature in 2000.

should not be disturbed, the Commission will avoid disruption of established CLEC business plans and ensure a grace period within which all parties may prepare for the altered regulatory environment.

C. Factors Relevant To the Commission's Identification of Unbundled Network Elements.

1. Burden of Proof

[12] In its determination of which network elements should be subject to unbundling requirements, the Commission has discretion to reach any conclusion that is supported by the substantial evidence on the record, and that is based on a reasonable interpretation of § 251(d)(2) and the pro-competitive purposes of the Act. The Commission must have a rational basis for its conclusions. See Iowa Utils. Bd., 119 S. Ct. at 736 (A[Section 251(d)(2)] requires the Commission to determine on a rational basis which network elements must be made available, taking into account the objectives of the Act and giving some substance to the unnecessary and impair requirements.). On judicial review, the Commission's determinations may be overturned only if arbitrary and capricious. See 5 U.S.C. § 706. Although parties to this proceeding no doubt have an interest in coming forward with record evidence to support their legal and policy arguments, as a legal matter the only burden is on the Commission to have a rational basis for its decision. The Commission is free to consider all of the evidence without requiring a greater showing by any party or parties.

However, in subsequent proceedings to modify the unbundling requirements the Commission adopts here, parties advocating modification should be required to demonstrate that conditions have changed sufficiently since the initial identification of those elements to warrant the modification. Unlike this proceeding, where the Commission writes on a clean slate, a subsequent

proceeding will involve alteration of existing rules. There should be a presumption that the rules remain in effect until it is affirmatively shown that there have been changes in the relevant factual circumstances which warrant a change.

2. Impairment

[17, 18] The ability of CLECs to provide the services they seek to offer is impaired within the meaning of § 251(d)(2)(B) if their ability to provide services without a network element is materially diminished. A CLEC's ability to provide services is materially diminished if an ILEC's denial of access to an element, taking into account the availability of the element outside the incumbent's network, either interferes with the ability of CLECs promptly to provide services they seek to offer to any class of customers in any geographic area, or provides a significant competitive advantage to the ILEC.

This definition of impairment is fully consistent with judicial decisions interpreting the term impair. Courts frequently apply the standard legal dictionary definition as to impair: "to weaken, to make worse, to lessen in power, diminish, or relax, or otherwise affect in an injurious manner." Humana Inc. v. Forsyth, 119 S. Ct. 710, 717 (1999) (quoting Black's Law Dictionary 752 (6th ed. 1990)); see id. (A law is to hinder its operation or frustrate [a] goal of that law).^{1/} The term impair is generally read to mean something less than total destruction or disability of the object at issue. See, e.g., id. at 716 (declining to define impair

23/ In re Henderson, 18 F.3d 1305, 1310-11 (5th Cir. 1994); Pure Waters Inc. v. Michigan Dept. of Natural Resources, 883 F. Supp. 199, 205-06 (E.D. Mich. 1995), aff'd, 82 F.3d 418 (6th Cir. 1996); Runnebaum v. NationsBank, 123 F.3d 156, 168 (4th Cir. 1997) (quoting standard dictionary definitions, such as to make worse by or as if by diminishing in some material respect, and a decrease in strength, value, amount, or quality) (internal quotations omitted); In re Barakat, 99 F.3d 1520, 1527 (9th Cir. 1996) (claims under bankruptcy plan are impaired if creditor's rights are in any way altered).

as synonymous with invalidate, supersede, or displace).^{4/} Accordingly, the impairment standard in § 251(d)(2) cannot be interpreted to require that unavailability of a network element makes it impossible for any CLEC to provide service. Congress established a higher threshold for access to proprietary elements than for nonproprietary elements, contrasting the necessary standard for the former with the impairment standard for the latter. In this context, *impaired* is plainly intended to be a less restrictive standard than *necessary*. A CLEC, therefore, may be impaired even if access to the elements in question is not necessary to its provision of service.

In determining whether service would be impaired under this definition, the Commission should consider, *inter alia*, several categories of factors:

- X Aggregate impact of unavailability of individual elements: The Commission should consider the aggregate effect of unavailability of two or more elements on CLECs' ability to provide service.

- X Alternate source provisioning: The Commission should consider whether an element is currently available for all CLECs as a group in commercially reasonable and sufficient quantity from at least two other sources, including third party and self-provisioning sources. Availability from more than two sources is generally important to ensure reasonable price, quality, and availability of an element.

- X Relative cost and quality of alternate sources provisioning: The Commission should consider the costs of third party or self-provisioning options relative to ILEC provisioning costs. For example, if CLECs pay materially more than the

^{24/} Energy Reserves Group, Inc. v. Kansas Power and Light Co., 459 U.S. 400, 411 (1983) (A[t]otal destruction of contractual expectations is not necessary for a finding of substantial impairment under the Contracts Clause); Ross v. City of Berkeley, 655 F. Supp. 820, 827 (N.D. Cal. 1987) (same).

ILEC pays for an element that comprises a significant part of CLECs' total cost of doing business, such a significant cost difference might well put CLECs at a significant competitive disadvantage and undermine CLECs' ability to compete profitably without access to the element from the ILEC at cost-based rates. Similarly, if CLECs cannot otherwise obtain an element the quality of which does not allow the CLEC to provide service that is at least equivalent to the ILEC's, the failure to get access to the ILEC's element impairs CLECs' ability to compete on reasonably equal terms.

- X Non-cost constraints on alternate source provisioning: The Commission should consider the extent of the delay inherent in the use of alternate source provisioning, the effect that delay will have on CLEC market entry plans, and the ability of vendors to produce sufficient quantities of the element to meet CLECs' needs in the event they were denied access to the element from the ILECs. In addition, the Commission should consider that, even if a particular facility or particular equipment can be obtained on a stand-alone basis from sources other than the ILEC, it may be impractical or uneconomic for a CLEC to use that facility or equipment to serve various particular classes of customers. For example, the availability and price of collocation space, both of which are under control of the incumbent LEC, may prevent CLECs from cost-effectively serving customers with their own switches if CLECs are dependent upon ILEC loops. Moreover, the Commission should consider issues such as the ILECs' ability to detach loops from their own switches, and re-attach them to the CLECs' switches in a commercially reasonable manner.
- X Impact of alternate sources on network operation: The Commission should consider how obtaining the element from alternate sources would affect the total cost of constructing and operating a network, and not focus solely on the stand-alone cost of the element.

Taking into account this definition and these factors, some non-exhaustive examples illustrate the appropriate interpretation of § 252(d)(1). First, CLECs' ability to offer service is impaired under this standard if their inability to obtain an element from the ILEC means that as a practical matter, it would be more difficult for them to provide local services at prices that are

competitive with the prevailing retail prices while permitting them to earn a reasonable return on capital. If unavailability of a network element produces only a slight decline in profits, while still allowing competitors to compete and recover a reasonable return on capital, the ability of CLECs to provide service would not be impaired. Iowa Utils. Bd., 119 S. Ct. at 735. But if unavailability threatens the ability of a CLEC to earn a reasonable return on capital in offering services generally, or for any class of customers, or in any geographic area (regardless of the absolute size of the additional cost involved), CLECs should have unbundled access to the element. Kwoka Decl., Tab 2, && 32-33.

Second, impairment is not only about cost. CLECs also are impaired if lack of access to a network element makes them unable to provide a feature, capability, or a competitive quality of service, and thereby diminishes their ability to provide service in the local market. If inability to obtain access to an element prevents CLECs from providing a feature of local service that customers expect from their local telephone company, they cannot provide service of comparable quality, and their ability to compete is impaired within the meaning of § 251(d)(2).

Third, impairment would also exist if lack of access to a network element would delay CLECs' ability to provide service to any class of customers or geographic area. Of course, most self-provisioning might take longer than leasing, and inconsequential delays would not constitute impairment. But if the time needed to complete design, acquisition, construction, and testing of new facilities would materially delay CLECs' market entry, CLECs must be able to lease network elements to avoid the delay and enable the prompt initiation of service. One of the principal purposes of the Act's unbundling requirements, after all, is to allow carriers to compete promptly rather than being forced to wait the long period of time it would take to duplicate the extensive physical plant constructed by the ILECs over the last century.

3. Proprietary Elements

[16, 19] CLEC access to a proprietary element is Anecessary≡ if, taking into account the availability or unavailability of the element outside the incumbent=s network, the inability to get the element from the ILEC would seriously impair or obstruct CLECs= ability to compete against the ILEC for any group of customers in any geographic area by giving the ILEC a competitive advantage that CLECs cannot otherwise overcome on a timely basis. The unavailability of a network element need not completely preclude CLECs from competing.

This definition maintains an appropriate distinction between the standards in subsections 251(d)(2)(A) and 251(d)(2)(B). See Iowa Utils. Bd. v. FCC, 120 F.3d 753, 813 n.33 (8th Cir. 1997) (FCC should not Ainappropriately conflate≡ requirements) aff=d in part, rev=d in part, sub nom. AT&T Corp. v. Iowa Utils. Bd. 119 S. Ct. 721 (1999). This Anecessity≡ standard entails a more significant degree of impairment or obstruction to justify unbundled access to proprietary elements than the Aimpairment≡ standard demands for non-proprietary elements. The difference is one of degree, not kind, and the focus of the inquiry in each case is on whether CLECs can effectively and efficiently provide services without unbundled access to the element.

This definition is supported by judicial decisions interpreting the term Anecessary≡ and is well within the FCC=s discretion to interpret the term consistent with its usual meaning, its context, and the statutory purposes. As the Supreme Court long ago stated, the term Anecessary≡ is susceptible to different meanings and should therefore be defined with regard to its statutory or constitutional context. M=Culloch v. Maryland, 17 U.S. (4 Wheat.) 316, 414-15 (1819). See Armour & Co. v. Wantock, 323 U.S. 126, 129-30 (1944) (rejecting rigid reading of term Anecessary≡). Given the wide range of legal uses of the term, judicial interpretations of

A necessary²⁵ have run the gamut from A convenient²⁶ or A useful²⁷ to A essential²⁸ to

A indispensable²⁹. Courts generally interpret the term liberally.^{1/} The Supreme Court has rejected the notion that A necessary³⁰ must be equated with A indispensable³¹. Armour, 323 U.S. at 130.

[15]b. Proprietary. Section 251(d)(2)(A) makes necessity an issue only with respect to A such network elements as are proprietary in nature.³² Local Competition Order & 282 (necessity standard applies to A proprietary elements (e.g., elements with proprietary protocols or elements containing proprietary information)³³; id. & 283 (necessity standard applies when A the element is proprietary, or contains proprietary information that will be revealed if the element is provided on an unbundled basis³⁴). Few elements are proprietary or have proprietary aspects.^{1/}

Despite their notable willingness aggressively to advocate legal and factual claims, the ILECs have

25/ E.g., M=Culloch, 17 U.S. at 413-14 (A To employ the means necessary to an end, is generally understood as employing any means calculated to produce the end, and not as being confined to those single means, without which the end would be entirely unattainable.³⁵); Commissioner v. Tellier, 383 U.S. 687, 1120 (1966) (A ordinary³⁶ and A necessary³⁷ expenses need only be A appropriate and helpful³⁸); United States v. Hernandez-Urista, 9 F.3d 82, 83-84 (10th Cir. 1993) (subpoena is A necessary³⁹ if witness= presence is A relevant, material, and useful⁴⁰); Federal Labor Relations Authority v. United States Dep=t of Defense, 984 F.2d 370, 372-73 (10th Cir. 1993) (deferring, under Chevron, to FLRA=s interpretation of A necessary⁴¹ for full and proper discussion . . . of collective bargaining⁴² to include union=s right to employees= home addresses, because communication with workers at home is important even though alternative avenues of communication exist); Chrisner v. Complete Auto Transit, Inc., 645 F.2d 1251, 1261-62 (6th Cir. 1981) (business necessity defense to Title VII disparate impact claim need not show indispensability; A[r]ather, the practice must substantially promote the proficient operation of the business⁴³).

26/ See Local Competition Order & 388 (A loop elements are, in general, not proprietary in nature⁴⁴), id. & 393 (A no evidence of proprietary concerns with unbundled access to the NID⁴⁵), id. & 419 (A the vast majority of parties that discuss unbundled local switching do not raise proprietary concerns with the unbundling or either basic local switching or vertical switching features⁴⁶), id. & 446 (A the record provides no basis for withholding these [interoffice] facilities from competitors based on proprietary considerations⁴⁷).

not claimed in any of the dozens of § 252 cases in district courts around the country that the elements required to be unbundled pursuant to the Commission's Local Competition Order are in any way proprietary.

The Local Competition Order defined the term Proprietary by example in a reasonable way. Notably, none of the ILECs challenged the Commission's existing definition before either the Eighth Circuit or the Supreme Court, and its meaning is therefore settled. The Commission has explained that an element is less likely to be proprietary if it already is offered on an unbundled basis, id. §§ 446, 490, or if it adheres to industry-wide, rather than company-specific, standards. Id. §§ 481, 490. An element is more likely to be proprietary if it utilizes technology specially tailored to the incumbent's individual network. Id. § 497 n.1157. Even if an element contains proprietary information, new entrants may be able to gain access to the necessary features or functions without gaining access to the proprietary information (e.g., when the new entrant can use a system without receiving direct access to the incumbent's proprietary method of data entry). Id. §§ 284, 498; see also id. § 481 n.1120.

If the Commission seeks to promulgate a more precise definition, a network element should be defined as Proprietary under § 251(d)(2)(A) if: (1) providing unbundled access to the network element reveals confidential information in which the incumbent LEC has a legally protected interest under state or federal law; and (2) the incumbent LEC does not provide the network element to any third parties. Under this definition, the network element is Proprietary only if confidential information is revealed to CLECs when they gain access to the particular element. Therefore, if a network element contains what ILECs assert to be confidential

information, but access to that information is not accessible by CLECs when they gain access to the element, the entire element is not Aproprietary≡ for purposes of § 251(d)(2)(A).

Moreover, the network element is only Aproprietary≡ if it contains confidential information in which the incumbent LEC has a legally protected interest under state or federal law. Therefore, if the interfaces, functions, features and capabilities sought by requesting CLECs are defined by recognized industry standard-setting bodies, are defined by Telcordia general requirements, or otherwise are widely available from vendors, the network element cannot be considered Aproprietary≡ because any information contained by the element is neither confidential nor entitled to legal protection under state or federal law. Also, under this definition, the network element is only Aproprietary≡ if the ILEC has a legally protected interest in the element=s confidential information under either state or federal law.

Finally, a network element is Aproprietary≡ only if the ILEC does not provide the element to any third parties, including competing carriers and end users. Information contained by the element cannot be considered confidential if the ILEC reveals this information to other parties.

4. Other Factors

Section 251(d)(2) identifies Anecessary≡ and Aimpair≡ as two factors that the Commission must Aconsider,≡ Aat a minimum,≡ without requiring the Commission to make either of them dispositive. The Commission is free to identify and give the appropriate weight to other factors as it sees fit, and it should also consider factors other than impairment and necessity in determining which elements should be unbundled. Thus, the Supreme Court was not called upon to address other factors or their relative importance, and it did not do so. Its holding was a narrow one concerning only the substance of the Aimpair≡ and Anecessary≡ standards, and not

the role they should play in a final determination of which element should be unbundled. See Iowa Utils. Bd., 119 S. Ct. at 734-36.

If denial of access impairs the ability of new entrants to compete, that alone is sufficient to indicate that the element should be unbundled. Because of the pro-competitive policies that animate the Act, however, the converse is not necessarily true: lack of impairment (or necessity in the case of proprietary elements) does not automatically mean that ILECs have a right to deny access. If an element does not meet the impairment or necessity standard, it still is properly unbundled for at least any of the following reasons.

The § 271 Checklist. In deciding whether CLECs need access to a network element, the Commission can and should consider whether the element is included in the competitive checklist in § 271(c)(2)(B) of the Act. Inclusion of an element in the competitive checklist is strong evidence that Congress believes it is mandatory for CLECs to have access to the element on reasonable and nondiscriminatory terms. The § 271 checklist includes local loop transmission (item iv), transport (item v), switching (item vi), access to DA services and operator call completion services (item vii), and access to databases and associated signaling necessary for call routing and completion (item x).

The inclusion of these elements in the checklist reflects Congress' judgment that unless and until these core items are available on reasonable and nondiscriminatory terms to CLECs, local competition cannot develop. Both § 251 and § 271 share the same goal of opening up local markets as quickly as possible to broad-scale competition. That these items are explicitly spelled out in § 271 and not in § 251 simply reflects Congress' judgment that whatever the Commission might conclude about future unbundling, it was critical that at least these core components of the network always be available for leasing. Thus, the checklist is irrefutable evidence of Congress'

judgment that the ability of carriers to offer local service on a reasonably level playing field in competition with BOCs would necessarily be impaired without access to each checklist item.

Ubiquity. Driven by our own interest in spreading construction and marketing costs across as many customers as possible and by consumer interest in all geographic areas in having competitive alternatives, MCI WorldCom=s goal is to offer ubiquitous local service. Other CLECs have the same goal. Given this coincidence of CLEC and consumer interest, elements should be unbundled if that would facilitate the ability of CLECs to provide ubiquitous service throughout a state or region. Because of economies of scale, connectivity, and density in providing local service (discussed in more detail below), the inability to provide ubiquitous service raises the costs of CLECs to serve even a more limited group of customers and thereby undermines their ability to compete for all customers. Herold/Stockhausen/Lathrop Decl., Tab 5, & 4; Kwoka Decl., Tab 2, & 29. Accordingly, the fact that in some locations CLECs may have alternate sources of an element does not mean that access to the element from the ILEC should be denied.

Classes of Customers. By the same token, the Commission should consider whether its identification of network elements to be unbundled would facilitate CLECs= ability to offer service to all categories of customers X residential as well as business, and small business as well as large business. Residential and small business customers to which CLECs seek to offer service should be able to enjoy the fruits of competition. Congress intended to foster ubiquitous competitive provision of service for residential and small business users as well as large business users, but in those geographic areas where there are no large businesses that generate heavy traffic, it is all the more infeasible for new entrants to replicate ILEC facilities, at least in the short

term. Access to ILEC elements is the only way to foster competitive provision of service to all classes of customers.

Immediate Competition. In unbundling network elements, the Commission should also consider whether unbundling will help CLECs jumpstart local competition. The Commission's unbundling rules facilitate the competing carriers' access to these [ILEC] networks and thus promote the Act's additional purpose of the expeditious introduction of competition into local phone markets. *IUB v. FCC*, 120 F.3d at 816; *see id.* at 811. It is not enough that CLECs may eventually be able to provide service without access to a particular network element. The public interest requires that local competition develop quickly, and competition based on leasing network elements is essential to achieve that goal because it necessarily takes time to deploy a ubiquitous network. Therefore, the Commission should consider whether CLECs have a practical need for specific network elements at any given moment.

Product Differentiation. Network elements should be unbundled to enable CLECs to differentiate their service from that of the ILECs. One of the principal goals of the 1996 Act is to promote innovation and diversity. That goal can be achieved only if network elements are unbundled in a way that permits CLECs to use them to provide new features and capabilities. Indeed, § 251(d)(2) itself focuses on the services a CLEC seeks to offer, not on the services that ILECs currently offer.

Economies of Scale, Connectivity, and Density. Network elements should be unbundled to allow CLECs to benefit from economies of scale, connectivity, and density comparable to those of the ILECs with their huge customer base and ubiquitous network. Provision of telecommunications services involves substantial economies of scale, connectivity, and density, and one important purpose of the unbundling provision of the 1996 Act is to permit

CLECs to compete with the same economies as ILECs even in the early stages of local competition when CLEC customer bases are necessarily small and CLEC networks are necessarily limited in their reach. Local Competition Order §§ 11, 232, 316, 340.

For example, a network element is useful to a CLEC only as part of a combination of elements integrated into a network. It makes no sense to consider unbundling without considering how the element is to be deployed within a network, and whether it can be cost-effectively deployed in light of scale, connectivity, and other economies. Access to unbundled ILEC network elements, especially when used in combination with other ILEC elements, has important efficiency implications precisely because the ILEC network is configured for efficient connections between the various elements in the network. Kwoka Decl., Tab 2, & 13. A CLEC may not be able to achieve equally efficient connectivity between elements if it connects ILEC network elements with elements from a CLEC network because the network architecture was not configured to accommodate efficient connection by other parties. The utility of a network element from another source is limited if significant costs must be borne in order to connect that element to other ILEC elements for which alternative sources do not exist. Network elements and combinations thereof should therefore be available if CLECs cannot otherwise achieve the efficiencies in the ILEC network.

CLEC Independence of ILECs. In deciding whether to unbundle an element, the Commission should consider that CLECs have strong reasons to minimize reliance on ILECs, and so there is little reason to fear that an opportunity to lease will discourage CLECs from self-provisioning whenever that is possible. As courts and this Commission have recognized, A independence from the incumbent LEC is a powerful incentive for new entrants to build their own networks. Southwestern Bell Tel. Co. v. AT&T Communications of the Southwest, Inc., No

A 97-CA-132 SS, 1998 WL 657717, at *11 (W.D. Tex. Aug. 31, 1998) (ASWBT); Local Competition Order & 685.

The reasons for this incentive are manifest. No rational company would pursue a business strategy that makes it dependent on the long-term cooperation of a single dominant rival. See Kwoka Decl., Tab 2, && 20, 24. As the Commission has found, and as experience confirms, an ILEC has both the incentive and the ability to engage in many kinds of [non-price] discrimination. For example, [it] could potentially delay providing access to unbundled network elements, or . . . provide them to new entrants at a degraded level of quality. Local Competition Order & 307. If the CLEC is not able to provide in a timely fashion the quality of service promised in its marketing campaign because of ILEC non-price discrimination, it will not only place the costs associated with the launch at risk, it will also substantially raise the costs of capturing customers in the future because its reputation will be harmed. Self-provisioning minimizes these risks. Additionally, a competitor that needs to rely on the ILEC for provisioning elements must provide critical information to its dominant competitor about its business plan. No CLEC would do so unless it had no other choice.^{1/}

Moreover, new entrants will want to build their own networks in order to be the first to market with new network technologies that provide more innovative services to consumers. See IUB v. FCC, 120 F.3d at 817 (the increased incentive to innovate resulting from the need of a carrier to differentiate its services and products from its competitors in a competitive market will override any theoretical decreased incentive to innovate resulting from the duty of a carrier to allow its competitors access to its network elements). Also, many customers seek out new

^{27/} See Levine/McMurtrie Decl., Tab 1, & 17.

entrants as independent sources of supply to provide redundancy in case of ILEC network failure, providing added incentive for CLECs to use their own facilities wherever it is feasible.

New entrants also have significant financial inducements to build their own networks. The Commission's pricing methodology takes as a given the location of an incumbent's current central offices as a given, even if an efficient new entrant would use fewer switching centers and place them more wisely. Local Competition Order & 683-685. Because the TELRIC methodology . . . does not assume a perfectly efficient network, new entrants have a further incentive to build their own facilities. SWBT, 1998 WL 657717 at *11; see also Local Competition Order & 685. Moreover, new entrants incur many transaction costs in obtaining and paying for network elements, and they face heavy costs in attempting to monitor and prevent the non-price discrimination identified by the Commission. Examination of the marketplace readily demonstrates that, as a practical matter, CLECs will naturally avoid use of ILEC network elements to the greatest extent possible.

D. The 1996 Act Does Not Incorporate Antitrust Law's Essential Facilities Doctrine.

[21, 22] The Commission has asked commentators to: (1) describe the essential facilities doctrine; (2) provide comments on the significance of the essential facilities standard under section 251(d)(2); (3) cite to relevant legislative history; and (4) describe how [the essential facilities doctrine] should be applied, if at all, to the determination of which network elements incumbent LECs must provide on an unbundled basis pursuant to sections 251(c)(3) and 251(d)(2). Second FNPRM & 21-22. MCI WorldCom has some familiarity with the essential facilities doctrine, having pioneered its application in establishing antitrust liability. See MCI Communications Corp. v. American Tel. & Tel. Co., 708 F. 2d 1081, 1132-33 (7th Cir. 1983).

These comments will address the questions in the order the Commission has asked them, and will demonstrate that § 251(d)(2) should not be read as incorporating the essential facilities doctrine.

1. The Essential Facilities Doctrine Sets Forth a Standard For Proving Willful Maintenance of Monopoly Power In Violation of the Sherman Act In Certain Narrowly Defined Circumstances.

Section 2 of the Sherman Act (15 U.S.C. § 2) prohibits a monopolist from willfully maintaining its monopoly power through wrongful or predatory acts of monopolization, sometimes referred to as exclusionary conduct.²⁸ See, e.g., United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966). The essential facilities doctrine is a means of proving willful maintenance under Section 2. A firm with monopoly power may be found to have willfully maintained its monopoly if the firm has exclusive or near exclusive control over inputs that are essential for the existence of competition between the competitor and the monopolist, and refuses to provide reasonable access to the inputs. See MCI Communications Corp. v. American Tel. & Tel. Co., 708 F.2d 1081, 1132-33 (7th Cir. 1983).²⁹

The essential facilities doctrine may be seen as a means of preventing a monopolist that has control over an essential facility or bottleneck from wrongfully extending monopoly power from one stage of production to another, and from one market to another.³⁰ See MCI v. AT&T, 708 F.2d at 1132; see also Alaska Airlines, Inc. v. United Airlines, Inc., 948 F.2d 536, 543-45 (9th Cir. 1991); Advanced Health-Care Servs. v. Radford Community Hosp., 910 F.2d

²⁸/ An act of monopolization may occur when a monopolist refuses to deal with its competitor without a legitimate business reason for the refusal. Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 605 (1985); accord Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 483 n.32 (1992). The essential facilities doctrine is one way of describing circumstances under which a defendant may be liable for "refusing to deal." See, e.g., Patrick J. Ahern, Refusals to Deal After Aspen, 63 Antitrust L.J. 153, 162 (1994).

139, 149 (4th Cir. 1990). Through control of bottleneck facilities in one market, a monopolist may raise its rivals' costs in an adjacent market, allowing the monopolist to charge elevated prices in the second markets. See Thomas G. Krattenmaker & Steven C. Salop, Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price, 96 Yale L.J. 209, 234-36 (1986).

To establish an antitrust violation under the essential facilities doctrine, a plaintiff must prove, in addition to the other elements of a Section 2 violation: (a) control of an essential facility by a monopolist; (b) a competitor's inability practically or reasonably to duplicate the essential facility; (c) the denial of use of the facility to a competitor; and (d) the feasibility of providing the facility. MCI v. AT&T, 708 F.2d at 1132-33. Some courts applying this test have required antitrust plaintiffs to show that monopolist's control of the facility enables it to completely foreclose its competitors from the market place. Alaska Airlines, 948 F.2d at 544.

2. Section 251(d)(2)'s Impairment Standard Cannot Permissibly Be Read as Incorporating the Sherman Act's Essential Facilities Doctrine.

[21] The essential facilities doctrine has no place here. To be sure, the Supreme Court's decision in Iowa Utilities Board acknowledged the ILECs' argument that § 251(d)(2) codifies something akin to the "essential facilities" doctrine of antitrust theory . . . opening up only those "bottleneck" elements unavailable elsewhere in the marketplace. 119 S. Ct. at 734. But the Court itself did not state any preference for, much less hold, that § 251(d)(2)'s impairment standard should be read as incorporating the essential facilities doctrine. The Commission should not -- indeed cannot -- give § 251(d)(2) that reading. Such a reading is not consistent with the

statutory text and structure. Moreover, although some components of an essential facilities case bear superficial similarities to the Act=s leasing requirements, e.g., both could involve the furnishing or withholding of part of an incumbent=s facilities, the purposes and effects of the two sets of rules are so different that reference to the essential facilities doctrine is irrelevant to the Commission=s consideration of the scope of the Act=s leasing requirements.

a. The Text and Structure of the Act Make Clear that § 251(d)(2) Cannot Be Read As Incorporating the Essential Facilities Doctrine.

Section 251(d)(2) requires the Commission to consider whether a new entrant would be Aimpaired≡ without access to a particular network element. The statute does not require the Commission to conclude that the element is an Aessential facility≡ as that concept is understood in Sherman Act jurisprudence. Indeed, the statutory text and structure make such a reading patently unreasonable.

To begin with, Congress deliberately chose an Aimpairment≡ standard for unbundled elements generally, not a standard that requires a showing that access to an element is Aessential.≡ As previously demonstrated, a new entrant is Aimpaired≡ in the ordinary sense of that term even if an element is not essential to the new entrant=s ability to compete. That the Aimpairment≡ standard does not impose an Aessential facilities≡ requirement is confirmed by the fact that Congress imposed a stricter Anecessity≡ standard for those few network elements that are proprietary in nature. As a matter of logic and plain English, the Aimpairment≡ standard is more lenient than the Anecessity≡ standard. By the same token, § 251(d)(2)=s necessity standard is itself more lenient than the standard an essential facilities plaintiff must meet. Thus, the text of § 251(d)(2) itself provides a complete answer to the Commission=s question.

Furthermore, imposing an essential facilities requirement would be inconsistent with other provisions of the Act, as well as its overall structure. Congress specifically intended that the 1996 Act would augment, not replace, traditional antitrust rules. To promote its goal of true competition in local telephone markets, Congress gave entrants new statutory rights under the Act and preserved entrants' remedies under the antitrust laws. Under the Act, Congress required incumbents to cooperate with entrants through three different means: interconnection, resale, and leasing of network elements. 47 U.S.C. § 251(c)(2)-(4). In addition, Congress expressly preserved entrants' antitrust remedies through an explicit saving clause that acknowledged the full applicability of the antitrust laws to local exchange markets. Section 601(b)(1) of the 1996 Act provides that nothing in the Act shall be construed to modify, impair, or supersede the applicability of any of the antitrust laws. Pub. L. No. 104-104, § 601, 110 Stat. 143 (Feb. 8, 1996) reprinted at 47 U.S.C.A. § 152 Hist. and Stat. Notes (West Supp. 1998).

Reading the Act to limit the scope of § 251(d)(2) would violate the well-settled rule of statutory construction that courts must give effect to all parts of a statute where possible. See Bowsher v. Merck & Co., 460 U.S. 824, 833 (1983); Fidelity Federal Sav. & Loan Ass'n v. de la Cuesta, 458 U.S. 141, 163 (1982). By expressly preserving entrants' antitrust rights in the Act, Congress indicated that it was granting new rights and remedies under the Act, not merely codifying previously existing ones. If Congress intended simply that antitrust standards govern the leasing of network elements from incumbents, it need not have passed §§ 251(c)(3) and 251(d)(2). Congress plainly intended that §§ 251(c)(3) and 251(d)(2) have broader scope than the essential facilities doctrine. Had Congress intended to limit the scope of the local competition provisions to narrowly defined essential facilities, it would have done so explicitly.

- b. The essential facilities doctrine serves an entirely different, and far narrower, purpose than the market-opening requirements of Section 251, and application of that doctrine in this context would substantial defeat achievement of Congress=s objectives.**

Incorporating a Sherman Act Aessential facilities≡ analysis into the decision of what network elements should be unbundled is fundamentally inconsistent with the purposes of the 1996 Act. The Sherman Act does not forbid all monopolies in all circumstances. It prohibits willful maintenance of a monopoly, and the essential facilities doctrine is one way of proving willful maintenance. The 1996 Act is not, however, merely an industry-specific application of the Sherman Act. The 1996 Act goes much further, and imposes affirmative market-opening requirements, irrespective of whether ILECs could be shown to have willfully maintained a monopoly in the past or whether they are willfully maintaining a monopoly now. The Act is designed to bring competition to local markets Aas quickly as possible≡ -- that is, to jumpstart competition. See H.R. Rep. No. 104-204 at 89 (1995). A standard of proof designed to identify specific instances of willful exclusionary conduct simply cannot serve as a benchmark for determining when network elements should be unbundled under an Act designed to maximize competition now, and not merely to prevent anticompetitive conduct. That standard will severely underserve the goals of the 1996 Act.

None of the specific requirements of the Aessential facilities≡ doctrine are, or should be, prerequisites to obtaining access to network elements pursuant to § 251 of the Act. Specifically, a new entrant need not show that an ILEC has Amarket power≡ in a particular defined market before being able to take advantage of § 251. To the contrary, all ILECs are automatically bound by the requirements of § 251 until such time as the Commission makes an appropriate determination pursuant to the forbearance provisions of § 10 of the Act that § 251(c) has been

fully implemented. Moreover, § 251(d)(2) cannot sensibly be read to require proof that the defendant willfully maintained or acquired a monopoly or specifically intended to acquire a monopoly. Grinnell Corp., 384 U.S. at 571; Spectrum Sports, Inc., 506 U.S. at 456. To meet that requirement through the essential facilities doctrine, the plaintiff must show that the defendant's wrongfully denied access to the facility at issue. IIIA Phillip E. Areeda & Herbert Hovenkamp, Antitrust Law & 773e. In contrast, the Act does not require an entrant to establish any wrongful conduct by an incumbent as a prerequisite to access to the element. All ILECs are automatically subject to the duty. Nor does the Act recognize general business justification defenses. Once it is determined that the CLEC is entitled to access to an unbundled network element, the reasons for the ILEC's withholding of the element are irrelevant.

The essential facilities doctrine and the Act also requires different levels of anticompetitive effects. An antitrust plaintiff seeking access to an essential facility generally must prove that, without nondiscriminatory access to the facility, the plaintiff will have a severe handicap in the marketplace. Twin Laboratories, Inc. v. Weider Health & Fitness, 900 F.2d 566, 569 (2d Cir. 1990). Indeed, in some courts, such as the Ninth Circuit, the plaintiff must show that the defendant's control over the facility gives the defendant the power to eliminate competition in the downstream market. Alaska Airlines, 948 F.2d at 544. In contrast, under the Supreme Court's mandate, the Act's language only requires some limiting standard. Whatever a limiting standard is adopted by this Commission, that standard plainly should not require entrants to prove that the denial of access to a particular element will drive them out of business or will altogether eliminate competition. The essential facilities standard is thus an improper one.

Furthermore, there is a fundamental difference between an antitrust rule fashioned by courts of limited jurisdiction -- with neither competence nor the desire to supervise an ongoing regulatory program -- and an expert federal agency explicitly charged by Congress with the task of creating competition where none previously existed. The Aessential facilities≡ doctrine reflects a proper prudential sense of the limits of the judicial role. As Professors Areeda and Hovenkamp explained, Aantitrust courts have rightly resisted undertaking the heavy, continuous and unguided burden of supervising the economic performance of business firms.≡ IIIA Antitrust Law, & 720b, at 207-09. Here Congress established a framework for federal and state regulators to set the terms and conditions for access to network elements in the context of a statute designed to maximize local competition as quickly as possible. The Commission has the authority, indeed the responsibility, to perform this task.

Finally, adopting the essential facilities doctrine is not necessary to promote facilities-based competition. The ILECs have seized upon the essential facilities doctrine because, in their view, it would limit their unbundling obligations under the Act. To try to justify that position, the ILECs have argued that leasing unbundled elements discourages facilities-based competition and innovation. But that position is fundamentally unsound. Widespread facilities-based competition will only emerge when CLECs have large-enough customer bases to support investment in duplicate facilities. That growth will be choked off if the ILECs leasing obligations are limited. MCI WorldCom does not agree that application of the essential facilities doctrine would necessarily limit ILEC leasing obligations. But regardless of the doctrine=s scope, the Commission should not look to the jurisprudence of the essential facilities doctrine to evaluate the ILECs= claims about facilities build-out. That is a policy judgment heavily dependent upon the

state of the factual record, and left by Congress to the Commission. Incorporation of the legal requirements of the essential facilities doctrine will not assist in resolution of this policy question.

3. The Act's Legislative History Confirms That Congress Did Not Intend to Adopt an Essential Facilities Standard.

[22] The Act's legislative history further shows that Congress was aware of the Essential facilities standard but nevertheless intended to adopt a broader standard. When Congress enacted the 1996 Act, it had been well aware of the essential facilities doctrine and that incumbent carriers controlled certain essential facilities. For example, in 1992, James F. Rill, Assistant Attorney General for the Antitrust Division of the Department of Justice, explained the doctrine to a congressional subcommittee evaluating telecommunications reform. Competition Policy in the Telecommunications Industry: A Comprehensive Approach (Part 3): Hearing Before the Subcommittee on Economic and Commercial Law of the Committee on the Judiciary, 102d Cong. 261-62(1992), reprinted at A&P Telecom Hearings (25C), *261-62. Even before then, in 1991, the Senate had considered telecommunications legislation that expressly referred to Essential facilities. See 137 Cong. Rec. S7054, S7058 (daily ed. June 5, 1991) (reading S. 1200, 102d Cong. 202 (1991)).

Despite its awareness of the essential facilities doctrine, and its prior consideration of legislation using the Essential facilities term, Congress did not incorporate the essential facilities doctrine into the 1996 Act. Had Congress wanted to adopt an Essential facilities standard it could have done so expressly, as it had previously considered. Instead, Congress adopted a more expansive standard, rejecting the essential facilities doctrine. This broader approach was expressly recognized by a member of the House of Representatives in a debate on H.R. 3636, 103d Cong. (1994), an early version of telecommunications legislation that

representative noted that the interconnection and unbundling requirements under H.R. 3636 were not restricted to essential facilities. 140 Cong. Rec. H5216, H5243 (daily ed. June 28, 1994).

That Congress did not intend to adopt anything like the essential facilities standard is further illustrated by the language that it rejected. One draft of the Act, reviewed by the Senate, provided that its requirements apply only to incumbents with Amarket power,≡ as determined by the Commission. S. 652, 104th Cong. 3 101 (1995) as, passed by the Senate reprinted in 141 Cong. Rec. H9954, H9956 (daily ed. Oct. 12, 1995) (draft of Section 251(a)(1)); see also S. Rep. 104-23, at 19 (1995). That same draft gave the Commission guidance as to the Arelevant market≡ to be considered in evaluating market power. Id. Neither of those antitrust elements -- ones that might limit the scope of the Act -- was adopted in the 1996 Act. The Amarket power≡ and Arelevant market≡ language was not included in the version of the bill passed by the House of Representatives. See H.R. 1555, 104th Cong. 3 101 (Oct. 12, 1995) as passed by the House as amendment to S. 652, reprinted in 141 Cong. Rec. H9978, H9979.

In summary, Congress was aware of the essential facilities doctrine, chose not to refer to the doctrine, and chose not to incorporate elements of an essential facilities case into the Act. Congress plainly intended that a standard other than Aessential facilities≡ apply to the Act=s unbundling requirements.

4. The Commission Should Not Adopt the Essential Facilities Doctrine as the Standard for Determining the Network Elements to Be Provided Under Sections 251(c)(3) and 251(d)(2).

It took more than ten years of litigation and multiple lawsuits under the Sherman Act before the market for long distance service became truly competitive. In supplementing antitrust laws with the 1996 Act, Congress sought to bring about competition in local markets faster than

competition came to the long distance market. Applying the essential facilities doctrine as a means of interpreting the “necessary” and “impair” language of § 251(d)(2) and implementing § 251(c)(3) would negate Congress’ effort in this regard.

The 1996 Act defines circumstances in which ILECs must deal with their competitors. As described above, those circumstances are different than the circumstances that a plaintiff must prove to invoke the essential facilities doctrine or other antitrust laws. Congress plainly intended the unbundling requirements of the Act to exceed the requirements of the “essential facilities” doctrine. There is no basis for using all or part of the essential facilities doctrine which is used to determine liability under the anti-trust laws to determine which network elements should be unbundled under the Act, an entirely different undertaking. Accordingly, if the Commission were to use the essential facilities doctrine as the standard under Section 251(d)(2), entrants would face burdens not contemplated by Congress, slowing down even further the emergence of meaningful competition in local exchange markets.

III. INDIVIDUAL NETWORK ELEMENTS

A. Introduction

To understand why competitors need access to the ILECs facilities, it is necessary to take into account the underlying scale, connectivity, technical, and uncertainty dynamics currently at play in local telecommunications markets.

The telecommunications industry is characterized by economies of scale and density that result in substantially lower costs for some elements when market penetration is great than when it is small. The extent of these economies will vary from UNE to UNE (depending, for example, on whether the UNE has point-to-point or “broadcast” characteristics), and from geographic location to geographic location (depending on traffic or customer density). See Bryant Decl., Tab

3, && 6-24 (describing that loop, switching and transport UNEs are each subject to economies of scale). These underlying economies will determine whether or not there is potential for a CLEC or third party to economically provide the UNE.

Equally important is the network architecture legacy of a century of government-sanctioned monopoly provision of local telecommunications services. The ILEC networks were not configured with multiple providers in mind. The architecture chosen was intended to efficiently interconnect ILEC network elements, with no concern given to X and indeed hostility toward X the interconnection of non-ILEC network elements to the ILEC network. This monopoly legacy affects both the physical configuration of the ILEC network and also the operations support systems needed to pre-order, order, provision, maintain and repair, and bill local telecommunications services. As a result, there are economies of connectivity associated with use of unbundled ILEC network elements in combination that are not available when using non-ILEC elements combined with ILEC elements.

Thus, when analyzing whether a CLEC can utilize an unbundled element provided by an alternative source without being impaired in its ability, offer local telecommunications service, it is not sufficient to look only at the underlying scale-related costs of the element in isolation. It also is necessary to evaluate costs of additional equipment or manual labor needed to connect that element to the ILEC network, delays due to interconnection difficulties, difficulties in coordinating interconnection to meet customer cut-over needs, inability to provision the commercial quantities generated by product launches, and possible quality degradation. For example, although there may be places in which the underlying scale economies in the abstract support using a non-ILEC switch, the additional costs associated with concentrating and moving traffic to the switch, the inability of the ILEC to timely provision commercial quantities of loops

due to the need for manual provisioning, or the lack of automated OSS functionality, may render it infeasible for the CLEC to deploy its own switch.

The ILEC network architecture was configured for a single monopoly provider. ILECs have approximately 23,000 switches at which their loops terminate. The CLECs are employing forward-looking networks that, given such advances as fiber technology, will require far fewer switches. But CLECs who deploy their own switches still must get their customers' traffic from the loops that terminate at those ILEC switches to the CLEC switches. This will require a transport link that the ILECs do not need to provide voice-grade local service. The competitive impact of this need for an additional link will be minimized if that link can be provided in the most efficient fashion possible. While the ILEC does not use loop and transport in combination to provide local service, but it does utilize such a combination both when it provides access service for interexchange carriers, and when it provides DSL services utilizing a distant packet switch. ILECs have developed all the OSS required to efficiently provision that combination for carrier access. Because both loops and transport are characterized by significant economies of scale, CLECs are impaired if they are not able to obtain these elements from the ILEC. The most efficient way to obtain these elements is in combination, taking advantage of the efficient provisioning system already developed for their use in a combination for carrier access. If CLECs must have access to these elements or their ability to provide local service using their own elements would be impaired by connectivity problems. ILECs should provide access to network elements in combination when ILECs are providing such combinations to any carrier for use.

Another dynamic factor at play is the technological change that is fundamentally expanding the capability of the existing public switched telephone network and shifting the place

at which functionality does or can occur within the local telecommunications network.^{1/} The once-familiar demarcation points between the loop, the switch, and transport no longer correspond to the realities of the most current network architecture. Limiting CLECs to access through the traditional demarcation points will undermine the CLECs' ability to connect their own elements, or to use the ILEC elements, efficiently. Element definitions must not constrain the increasingly flexible network topology; they should maximize the ability of CLECs to interconnect their network elements to the ILEC elements.

A related technological dynamic is the convergence of voice and advanced services, and the need to configure networks that most efficiently handle both voice and data traffic. This requires a melding of voice and data network elements and creates the need for new points of demarcation and new network elements.

These technological changes have several important implications. First, existing networks are increasingly an amalgam of different technologies. For example, the loop plant from any

^{29/} Thus, next generation digital loop carrier (NGDLC) systems are replacing older digital loop carrier systems, both of which are replacing the Ahome run≡ copper; already 20 percent of all access lines are DLC, and that share is expected to ultimately increase to 50 percent in urban areas and to 80 percent in rural areas. See Bellcore GR-303 Integrated Access Symposium, San Diego, CA. (July 29-30, 1998), www.bellcore.com/gr/gr303.html#forum. Digital subscriber line access multiplexers (DSLAMs) can be installed to provide high speed (broadband) service over copper facilities. Packet switches are being installed in greater numbers to handle the exponential growth of data traffic. Finally, the capacity of fiber optic systems grows significantly with each advance in electronics.

particular central office could consist of a variety of technologies. Any given central office could have loops of Ahome run \equiv copper (copper all the way from the customer premise to the ILEC end office), universal digital loop carrier (UDLC), integrated digital loop carrier (IDLC), or, the most current technology, next generation digital loop carrier (NGDLC). The feeder portion of these loops may use copper or fiber. Therefore, a definition of UNEs in terms of existing technologies is inherently unstable; increasingly, definitions must be in terms of functionalities. Definitions in non-functional terms will thus increase the workload of regulatory agencies and require greater and more continuous regulatory intervention in interconnection issues.

Second, many of these new technologies have new capabilities that, if not impeded, will make it easier for CLECs to interconnect their self-provisioned elements to the ILEC network. They provide an opportunity for reducing the current disadvantage CLECs face with respect to economies of connectivity, thereby fostering competitive entry. In turn, local competition and the construction of new networks will accelerate the evolution from a single carrier environment to a multi-carrier environment. For example, NGDLC is designed to be able to Amulti-host \equiv the DLC equipment to different switches. DSLAMs are being developed to Amulti-port \equiv to different packet switches.

Third, as a result of technological change, more and more network facilities are being shared by multiple carriers. Transport is an example of a network element that has long been shared. Switching as well can be and, on a limited basis, is being shared. More and more of the loop plant can be used by more than one provider at the same time. For example, in NGDLC systems, the feeder part of the loop plant from the remote terminal in the field to the central office is not dedicated to one particular customer, but rather the capacity on that feeder is allocated dynamically to fit the needs of the system. Even copper loops can now be shared by voice and

data providers through use of DSL technology. As a result, it is no longer appropriate to define UNEs under the assumption that specific equipment and facilities are necessarily dedicated to one particular customer. The ability of CLECs to compete would be impaired if they cannot use the same economies resulting from sharing that ILECs can realize when they provide multiple services, or services to multiple customers, over the same facilities.

A final dynamic is the uncertainty dynamic. There has been very limited CLEC entry to date in part because of an uncertain regulatory environment. CLECs do not know what UNEs are (and will be) available to them, under what terms, conditions, and rates. Therefore, they have a very difficult time constructing business plans to support product launch. See Levine/McMurtrie Decl., Tab 1, && 3-6, 9. That uncertainty is especially pernicious when it is built into the regulatory framework through giving the ILECs the discretion to challenge each and every CLEC request for access to a UNE. MCI WorldCom has been forced to respond by focusing its business market launches on end-to-end provision of service on our own network, which minimizes uncertainty associated with the actions of the ILECs (our dominant competitors) or of future regulatory decisions. See id., && 10-11. But the regulatory uncertainty (along with other factors) generally has prevented MCI WorldCom from offering local service where it is infeasible to deploy our own facilities, which has dramatically affected our ability to provide service to residential customers. See id., && 4, 16-20.

Taking into account these dynamics, there are several different reasons why a CLEC will need access to ILEC UNEs, and why they should be made available on a uniform, nationwide basis. First, there are some ILEC elements to which CLECs will always need access, even if they were pure facilities-based service providers, just to complete calls to ILEC customers. These

include access to ILEC signaling systems and call-related databases, to ILEC bulk directory assistance databases, and to ILEC OSS.

Second, there are elements, such as loops and most transport links, whose underlying costs exhibit substantial scale economies that will place new entrants without access to the element at an overwhelming competitive disadvantage, using foreseeable technologies.

Third, there are elements with substantial, but not preclusive, economies of scale, such as switching, that nonetheless currently cannot be used in conjunction with other elements as efficiently when supplied by the CLEC as when supplied by the ILEC X that is, elements for which there are reduced economies of connectivity when provisioned by a non-ILEC.

Finally, there are some elements (such as transport) for which alternative sources generally are not available, but for which at some unique locations (due to location-specific characteristics, such as a location where interchange carriers already have concentrated much traffic) alternative sources can be profitably utilized by the CLEC. If a rule on UNE access could be constructed that could distinguish these unique locations from the more prevalent ones without creating delays or uncertainty about the availability of UNEs that impairs the ability of CLECs to construct business plans and undertake product launches, a CLEC would not be impaired if denied access. But any rule that would allow ILECs to tie up UNE access in litigation in the vast majority of applications in which the CLECS need the ILEC element will only impair, not foster, CLEC provision of local telecommunications service.

With these underlying market dynamics firmly in mind, in the following sections, MCI WorldCom identifies and defines those unbundled ILEC network elements to which CLECs need access in order not to be impaired in their ability to offer local service.

2. Loops and Loop-Related Elements

For the overwhelming majority of customers, the underlying scale economies associated with the loop render it a natural monopoly. See Bryant Decl., Tab 3, & 6. As to all but a tiny fraction of customers, it is economically infeasible (and would represent inefficient use of society=s resources) for new entrants to build out an additional line to the customer=s premise. See id. & 9. The loop is the single most expensive and time-consuming element in local networks for CLECs to duplicate on a pervasive scale. See id. & 6 (the loop comprises 44% of the total investment by ILECs in their network). Nor are there alternative sources of loops available on a commercial wholesale basis. CLECs need access to unbundled loops to reach their customers of both traditional and advanced services. The lack of access to ILEC loops would not simply Aimpair≡ the ability of CLECs to provide telecommunications services; it would foreclose entirely their ability to reach broad categories of residential and small business customers, as well as many locations of large businesses with multiple locations.

No part of the loop is proprietary to the ILEC. As a result, the Anecessary≡ standard of § 251(d)(2)(A) does not apply, though access to loops clearly is essential for CLECs to offer local telecommunications services. That is why Congress included access to unbundled the loops as a checklist item in § 271 of the Act, and why the legislative history of the Act identifies the loop as an example of a UNE. None of the factors that required this conclusion in 1996 has changed materially in the last three years.

The significant public policy issue confronting the Commission is not whether ILECs must provide unbundled loops to CLECs, but rather how to define these loop facilities that must be made available pursuant to § 251(c)(3).

Given the loop=s continuing natural monopoly characteristics, CLECs cannot successfully enter the local market unless they can efficiently interconnect to the ILEC=s loops X using their own network elements, the ILEC=s UNE platform, or an ILEC packet switch in the case of xDSL circuits. They must be afforded the flexibility they need to connect to the ILEC=s loops so they can choose the technology and network configuration that minimizes the cost differential between connecting those loops to their own switches as compared to connecting them to ILEC switches. Wimmer Decl., Tab 4, & 3.

A loop is no longer only end to end copper from the customer premises to the ILEC end office. Quite often it consists of various components. More than 20 percent of all loops use Digital Loop Carrier technology, and that percentage will only increase over time with further deployment of DLC. Id. & 4. Copper wire runs from the customer premises to a DLC at a remote terminal, where the traffic from multiple loops is concentrated and, when NGDLC is used, an individual customer=s traffic is no longer transported on its own channel, but rather is transported over shared channels. In addition, the capability of the loop is largely dependent upon the electronic components attached to it. Id. & 4. Market forces punish CLECs if they are unable to choose those loop components they need to efficiently provide local services. These electronics must be made available to CLECs either as stand-alone elements or sub-element, and also as an integral part of a loop.

These dynamic market developments can best be addressed by a functional loop definition that can accommodate, but does not embed within itself, the different technologies used to connect the customer premises to the local network. MCI WorldCom proposes modification of

the initial definition to more explicitly reflect the various places at which access to the loop can take place. MCI WorldCom suggests definitions and rules that cover the following:

The loop is the means of transmission between a customer demarcation point and a loop access point, including whatever cross connections are needed to join the loop to the next network element, and including at the CLEC's option all loop electronics that support transmission, including, but not limited to, DSLAMs, other multiplexing, and digital loop carrier systems. At the CLEC's option, the loop may be identified in any appropriate manner, including but not limited to identification by its physical components or by the transmission bandwidth need by the CLEC.

The Acustomer demarcation point is that physical or logical point at which the customer's network or wiring, and the ILEC's network meet, which may be at the network interface device, or may be at some point between the Aintrabuilding network cable and the customer-maintained and owned wiring.

The Aloop access point is the point at which the loop is connected to other network elements, and the CLEC may identify any of the following as a loop access point:

**NID;
Remote terminal;
Central office main distribution frame;
Central office digital cross-connect bay;
Central office collocation pot bay or its equivalent;
ILEC packet switch; or
Any other technically feasible point of connection at which a CLEC needs access or it would be impaired in its ability to offer local service.**

This definition is similar to the definition in the initial Section 319 and in the Local Competition Order in that it does not attempt to define the underlying technology that is used to provide the necessary transmission. Any such definition would be overly complex and would quickly become obsolete as new technologies are developed. In any event, the technology the ILEC uses to provide the requested transmission frequently is not relevant, so long as it is made available on a nondiscriminatory basis and meets the CLEC's order specifications. Instead, as in the earlier definition, the Commission should require the CLEC to specify only the point at which the CLEC gets access to the loop. The proposed definition differs from the earlier definition in

that it fully accommodates the variety of loops currently in the ILECs' loop plant, and makes clear that loop electronics are part of the loop element. Additionally, the proposed definition provides more guidance concerning the places at which CLECs may combine other elements to the ILECs' loops, as efficient interconnection is critical to the CLECs' ability to use ILEC loops.

The customer demarcation point is the physical or logical point at which the customer's network (or wiring) and the ILECs' network meet. Wimmer Decl., Tab 4, & 5. In single family houses and some other cases, that customer demarcation point is at the NID X a cross-connect device used to connect loop facilities to inside wiring X that typically is located at a minimum point of presence on a customer's property, in a jack in a box on the outside of the house or a punch-down block inside a business premises. In multi-tenant office and apartment buildings (and in commercial or school campus situations), in which about one-third of all loops terminate, however, there typically also is premises wiring that is owned or controlled by the ILEC that runs between the NID and the customer demarcation point. Id.^{30/} This wiring on the customer premises is classified in the ILECs' books as intrabuilding network cable and carries an outside plant accounting classification. Id. & 5; 47 C.F.R. § 32.2426. It is not the inside wire that has been deregulated for 15 years. Rather, it is what has been known in the industry as house and riser cable and interbuilding campus wiring. Wimmer Decl., Tab 4, & 5.

CLECs must have access to the NID and to intrabuilding network cable. These should be treated as components of the loop.^{31/} While NIDs are available from manufacturers at a reasonable price, it is extremely unlikely that it would be viable for CLECs to deploy their own NIDs when

^{30/} The functionality of the demarcation point is defined in 47 C.F.R. § 68.

^{31/} Alternatively, they can be treated as separate unbundled network elements.

they use ILEC UNE loops. Although the cost of the NID is small in absolute terms and NIDS are available from multiple sources, the cost of installing a NID is usually prohibitive. When a CLEC is leasing an unbundled ILEC loop, it would be prohibitively expensive for it to dispatch technicians to each and every customer location to install a new NID, and it would be wasteful to impose on new entrants the costs both of disconnecting loops and NIDs that are normally combined in ILEC networks and of installing new and unnecessary NIDs. Id. & 6; see Iowa Utils. Bd., 119 S. Ct. at 729 (discussing § 51.315(b)).

Further, it often is infeasible for CLECs to replicate intrabuilding network cable in multi-tenant buildings or on campuses. Even if it were economically feasible to do so, and space existed in the ducts, landlords rarely will agree to provide the necessary access because of the disruption associated with installing redundant parallel cable pairs. CLECs therefore need access to that intrabuilding network cable to be able to provide telecommunications services to customers in those locations. Wimmer Decl., Tab 4, & 7.

The other end of the loop is identified in the definition as the loop access point. In ordering the loop, the CLEC would be impaired unless it can choose among multiple potential loop access points. CLECs will need to gain access to loops by various means, since the most efficient way to connect to these loops will depend on the nature of the ILEC network, the nature of the CLEC network, the use to which the CLEC will put the loop, and any technical limitations inherent in the loop technology.

Generically, the loop access point is the point at which the loop is connected to other network elements, connected to a CLEC network, or connected to a CLEC collocation. Id. & 8. The loop includes the cross connection needed to join the loop to the next network elements,

whether that element is provided by the CLEC, by the ILEC, or by a third party. There are many potential loop access points, each of which should be identified in a rule. For example:

- X Loop Access Point at the NID: When a CLEC is providing its own loops to a multi-tenant building or a campus in which the intrabuilding network cable is owned or controlled by the ILEC, the CLEC will gain access to the multi-tenant building or campus at the NID, but will need access to the ILEC loop components that run from the NID to individual customer demarcation points on the far side of the intrabuilding network cable. Id. & 8.
- X Loop access point at the remote terminal: A CLEC may choose to serve an area by building its own facilities to loop aggregation points like remote terminals. In this case, the CLEC would need access to the (typically copper) loop extending from the remote terminal to the customer and to the NID. Depending on the CLEC's expected market penetration and other factors, it also might need access to loop electronics such as a DSLAM, digital multiplexing, or a DLC at a remote terminal. Id. & 9. These loop electronics are all part of the loop transmission facility and should be identified as part of the loop element, as well as being separately available as unbundled network elements at the request of CLECs.
- X Loop access point at the central office: Most frequently, the CLEC will request access to all of the loop components in the ILEC central office. Depending on the technologies deployed by the ILEC, the central office termination of the loop could occur in a variety of places:
 - Loop access point at the main distribution frame: For all-copper loops with no loop electronics, the most likely connection point is at the main distribution frame. This is the configuration explicitly identified in the loop definition in the initial rule. In some cases, the ILEC and CLEC have agreed to utilize a Point of Termination (POT) bay as the interface point. In such cases, the POT bay would serve as the loop access point. Id. & 10.
 - Loop access at a digital cross connect bay: When the ILEC deploys pair gain or other electronics in the loop and the electronics permit connection to the CLEC without further ILEC handling (e.g., dedicated IDLC, DSLAM, or multiplexing), the loop access point will be at a digital cross connect bay. Again, these connections may be extended to a POT bay if the parties have agreed to utilize POT bays. Id. & 10.
- X Loop access point after an ILEC switch: If the loop electronics are shared rather than dedicated to a particular customer, the CLEC often will require ILEC switching in order to gain access to the loop traffic, whether or not it wishes to make use of the ILEC switching as a discrete element. In these cases, the CLEC will not gain effective access to the loop until the customer's signal has been routed through an ILEC switch. Such

access typically will occur when the ILEC has deployed IDLC, DSLAMs or remote switch modules between the customer and the central office. Thus, with DSLAMs, it usually is not possible for the CLEC to access its data traffic (i.e., separate its data traffic from other carriers= data traffic) until that traffic has gone through the ILEC's packet switch. Therefore, the access point or a DSL-equipped loop must be after the packet switch. Because packet switches are not yet deployed at every central office, the CLEC will require a loop component (what has traditionally been called interoffice transport) to that packet switch as part of the unbundled loop network element. Generally, the CLEC will need the loop and packet switch as a combination to offer advanced services to end users. Id. & 11.

Finally, to ensure that CLECs are not impaired because they are foreclosed from using new technologies in the future, the rule should state that additional loop access points must be made available upon a showing of technical feasibility and impairment.

When ordering loops, the CLEC would need to specify the desired loop access point. Additionally, given the growing demand for advanced services, it is likely that in the future loops will increasingly be ordered either with a specified bandwidth or capability. For example, MCI WorldCom may want to specify a 2-wire and/or 4-wire DSL capable loop in such a way that it is only length or make-up that determines performance. Id. & 12. The definition should make clear that when ordering CLECs appropriately can identify loops by bandwidth.

Finally, CLECs should be able to specify whether the loop should include electronic loop components, such as DSLAMs. DSLAMs include the modems and data multiplexing required to provide advanced services over existing copper loop plant. DSLAMs, are not exorbitantly expensive; a CLEC can purchase off-the-shelf for about \$8,000 to \$20,000 a DSLAM capable of serving 200 to 300 lines. But that DSLAM must be placed in a collocated space whenever the copper portion of the loop ends. Thus, collocation may be required in the ILEC end office or at a remote terminal. The delay and costs of collocation can be substantial. In many circumstances it is not possible or economically viable for a CLEC to install its own DSLAM because no collocation space is available at the ILEC end office or remote terminal, or because the revenues

that would be generated are insufficient to justify the costs of collocation, as well as the costs of purchasing and installing the DSLAM. In rural areas, the density of traffic and revenue opportunity will make it difficult to justify the business costs involved. Unless ILECs are required to make their DSLAMs available as part of the loop, CLECs will be unable to provide ubiquitous DSL service, and notably will not be able to serve most rural areas. Given the low demand that can be expected in rural central offices relative to the capacity and price of DSLAMs, the most efficient use of equipment is to have the CLEC share scale economies by offering DSLAMs to all carriers as a component of the loop. Id. & 13.

The Commission should clearly state that the CLECs may place their own electronics on ILEC loops so long as those electronics do not cause harmful interference with other technologies used in the same transmission facility. Thus, the CLEC should be able to place its own IDLC, DSLAM, remote switch module on multiplex at any feasible point in an ILEC's loop plant and utilize ILEC dark fiber or other transmission media to reach the servicing central office.

In each instance, the loop element includes all structures and drops, stubs, jumpers and other cross-connections necessary to join one loop element to other network elements.

C. Switching

Switching is the function of creating temporary connections between or among loops and transport in order to route voice and data traffic. It is characterized by economies of scale and X affected by economies of connectivity that give ILECs substantial cost and operational advantages over CLECs. As shown in the analysis performed by Dr. Bryant, there are scale economies in switches at every geographic cost zone that favor the incumbents' greater market penetration. Indeed, the number of switches deployed by CLECs in a particular local exchange area is likely to

be limited by economies of scale, and this will have effects on other CLEC costs, particularly transport. See Bryant Decl., Tab 3, & 24.

Even if a CLEC can project enough traffic volume to justify deployment of its own switches, it will be feasible for the CLEC to undertake that deployment only if in so doing it is able effectively to utilize ILEC loops in conjunction with its own switches. Unfortunately, under current conditions, CLECs who use their own switches rather than ILEC switches face substantial additional costs and provisioning problems in gaining access to the ILECs= loops that are not faced when the ILEC loop and switch are ordered in combination. Id. & 14.

CLECs must get their customer traffic off the loops that terminate at the ILEC end offices and transport it to their switches. Although there are potentially less expensive ways to concentrate and transport traffic to their switches, currently the most common way to accomplish this is to collocate equipment (e.g., DLC or DSLAMs) at all the ILEC end offices whose traffic will feed into the CLEC switch. In addition, the traffic must be backhauled to the CLEC switch. When these additional costs are added to their underlying scale disadvantages, in many places it is not feasible for CLECs to deploy their own switches. Id. & 15.

In addition to these cost disadvantages, currently there is no electronic provisioning system for the typical end to end copper loop where the ILEC already provides the loop and switch services together. When MCI WorldCom or any other CLEC attempts to connect such ILEC loops to its own switches, a manual cross-connect must be performed at the MDF at the ILEC end office. It is far from clear whether any provisioning system relying on such manual cross-connects could support mass markets competition, in which a competitor would be asking

the ILEC to deliver thousands of loops each day. Id. & 16.^{1/} The ILECs themselves never had the need to move so many customers on and off their system so quickly, as their networks, and their customer bases, grew incrementally. In any event, whatever may be theoretically possible, no ILEC has in fact developed the internal processes that would enable them to perform these manual activities in large volume. Id. & 17.

Because as a practical matter competitors need ILEC loops in order to offer mass market services, and because competitors that need ILEC loops in mass market quantities are forced to use ILEC switches as well, the so-called AUNE platform^{32/} has become the only facilities-based service entry vehicle capable today of servicing large numbers of residential customers. One critical difference between the UNE platform and an ILEC loop-CLEC switch combination is that the former can be provisioned electronically. The latter cannot. Another critical difference is that the ILEC require competitors to collocate if they wish to use their own switching. The platform does not require collocation. Thus MCI WorldCom has launched a mass market product throughout New York State using Bell Atlantic's UNE platform. Id. & 18. This is not an abstract proposition. In New York, where the element prices do not make competition impossible, where the UNE-P platform is available, and where there is at least some working OSS to order and provision the platform, we are in the mass markets business. In a few short months since these pieces have been in place, MCI WorldCom already has in excess of 40,000 residential

^{32/} In their cost studies the ILECs typically have claimed it takes 30 minutes to perform each cross-connect. At that speed, because the processes are manual it will be a lengthy and difficult process for ILECs to handle the thousands of orders likely to be generated by a CLEC Mass Markets product launch. Id. & 16.

customers serviced through the platform, with another 20,000 customers expected to be on MCI local service next month. We expect these numbers to grow rapidly. All of this is happening even though Bell Atlantic continues to have problems with its OSS. If and when Bell Atlantic fixes the remaining problems with its OSS, we will be in a position to compete aggressively for a great many more residential customers, and we have every confidence that New York consumers will respond enthusiastically. Id. & 17. MCI WorldCom would not be able to offer that product unless it had access to unbundled local switching, even in Manhattan, which has more CLEC switches than any other location in the country. Id. & 18. And MCI WorldCom cannot currently offer mass market services throughout the country because it has been deprived access to the platform with elements available at cost-based rates.

Because of the substantial obstacles that face a CLEC that wishes to combine the ILEC loop with its own switch, CLECs needing to lease ILEC loops typically also lease the ILEC switch, even when they have deployed their own switches. For example, MCI WorldCom has its own switching in place in Manhattan, but does not use that capability to provide Mass Market service in Manhattan. MCI WorldCom has made that choice because Bell Atlantic is not capable of provisioning loops for CLECs in commercial volumes when CLECs use their own switching. Id. & 19.

Although there are 23,000 ILEC end office voice switches, as of the end of 1998 there were only 579 CLEC voice switches, with 250 more planned for 1999.^{1/} Moreover, since these totals include all CLEC switches, and since the same market considerations typically lead more than one CLEC to locate a switch in a particular area, a large portion of the totals represent the

^{33/} New Paradigm Resources Group, 1999 CLEC Report, 10th Ed., Author: New York, Chapter 6, p. 14 (Table 7).

switches of different CLECs that serve the same geographic areas. For example, there are more than 20 CLEC switches in New York City, most of which serve lower Manhattan.^{1/} The sum of the matter is that the overwhelming majority of ILEC switches provide service to customers who cannot efficiently be served by any competing switch. Requiring CLECs to deploy all the switches needed to provide ubiquitous service in competition with ILECs would significantly delay competition by imposing impossible financial and logistical burdens on the CLECs.

If CLECs are not able to build market share by serving customers with unbundled ILEC switching prior to deploying their own switches, then the business case for deploying a switch may be delayed or undermined altogether. Wimmer Decl., Tab 4, & 19. The same could happen even if switching were identified as a UNE but ILECs were able to challenge X and thus delay X CLEC requests for UNE switching on an end office-by-end office basis. Even if it were financially viable to deploy switches for ubiquitous market coverage, CLECs can only deploy so many switches at a time, and once a decision to deploy is made it still takes 18 to 24 months to provision a Class 5 switch. Herold/Stockhausen/Lathrop Decl., Tab 5, & 6. For all of these reasons, CLECs are impaired without access to unbundled ILEC switching. Congress therefore properly recognized CLECs' need for access to unbundled switching when it identified switching as a UNE in the legislative history of the Act.^{1/}

^{34/} New Paradigm Resources Group, 1999 CLEC Report, 10th Ed., Author: New York, Chapter 8, pp. 88-89.

^{35/} S. Rep. No. 104-23 (1995).

As local networks continue to evolve, there is another reason why CLECs will be impaired in their ability to provide local services without access to both local circuit switching and packet switching. ILECs are deploying loop technologies inextricably tied to switching functions. These technologies either significantly improve the quality of local loops or reduce costs by concentrating more customers over fewer access channels. Examples of this trend are remote switch modules and DLC, which improve both transmission and concentration, and DSLAMs, which increase bandwidth. Unless a CLEC has demand sufficient to justify placing its own dedicated device, all three technologies require use of an ILEC switch to gain access to the individual customer after the customer's loop has passed through the device. Wimmer Decl., Tab 4, & 20.^{1/}

As discussed above in the loop section, current local network design pushes loop concentration ever closer to the end user. When the DLC and DSLAM are remotely located with currently deployed technology, a CLEC has no alternative but to use the ILEC switch. While manufacturers are responding to the possible demand for multi-hosted DLC and DSLAMs, that is, loop devices that can subtend multiple switches, such technology is not yet widely deployed. If CLECs are to be permitted to compete for customers that are served by ILECs using these loop technologies, then the CLECs also must have access to ILEC circuit and packet switches. Id. & 21.^{1/}

^{36/} Older versions of DLC were not as integrated into local switching as NGDLC. But the economics of NGDLC are compelling that carriers may choose to deploy it even on all copper loops to minimize the use of (and costs associated with) local switching ports. Id. & 20 n.1.

^{37/} Without access to vertical features, CLECs would be impaired in several ways. They would suffer from inferior access to the switching functionality that the ILECs enjoy, and thus would not be able to provide all the services provided by the ILECs, such as call waiting or caller ID, which many customers view as necessary elements of service offerings. Moreover, restricted

or costly access to these vertical features will undermine CLECs' ability to provide unique service packages and pricing plans. Id. & 22.

Similarly, the switching UNE must include the customized routing embedded in the switch that is needed to complete calls X including the customized routing needed to direct a CLEC's customer to that CLEC's operator services and directory assistance platforms. Otherwise, the CLEC would not be able to provide its customers operator services and DA on its own, and would have to re-brand the ILEC's service. As a corollary, the ILEC must not be allowed to insist upon using an outdated customized routing protocol that would add to the CLECs' costs when more efficient customized routing protocols are available and in use to route calls today. Id. & 22.

Finally, in this regard, there are especially compelling incentives for CLECs not to use the ILECs switch whenever it is in a position to use its own. Switching contains much of the intelligence of the network, and when MCI WorldCom can use and maintain control over its own switching it is best able to differentiate its product from the ILECs, and best able to integrate its local and long-distance products. Switching is therefore the one element over which CLECs would most like to have control, and they will avoid reliance on ILEC switching unless truly necessary.

MCI WorldCom believes that the definition of switching contained in the Local Competition Order is essentially sound. We suggest only two changes to the existing rules. First, the rules were written as if switches connected only to home-run copper loops. As discussed earlier, this is not the case. Already 20 percent of all loops utilize DLC, and that proportion will become a majority in the near future. Similarly, distinctions between line-side facilities and trunk-side facilities are becoming less clear. The Commission should amend the technology-specific or architecture-specific references in the existing definition; we provide suggested language below. Second, additional language is needed explicitly to take into account packet switching, which the Commission has already acknowledged should be included within the definition of unbundled local switching.^{1/}

We, therefore, propose that rules for Switching cover the following:.

- (1) Generic Switching Capability: Switching is the function of creating temporary connections between or among loops and transport in order to**

^{38/} Memorandum Opinion and Order, and Notice of Proposed Rulemaking, In re Deployment of Wireless Services Offering Advanced Telecommunication Capability, 13 F.C.C.R. 24012 (1998).

route voice, data, or other traffic that flows over the public switched network.

(2) Local Circuit Switching Capability

(i) The local circuit switching capability network element is defined to include:

(A) all facilities needed to connect loop access points to the switch facility and to connect transport access points to the switch facility, including, but not limited to, the main distribution frame, switch line cards, line port cards, trunk port cards, and any and all necessary cross-connections.

(B) all features, functions, and capabilities of the switch, including, but not limited to:

(1) the basic switching function of connecting lines to lines, lines to trunks, trunks to lines, and trunks to trunks, as well as the same basic capabilities made available to the ILEC=s customers, such as telephone number, white page listings, and dialtone;

(2) all other features that the switch is capable of providing, including but not limited to custom calling, custom local area signaling service features, and Centrex, as well as any technically feasible customize routing functions provided by the switch.

(3) All other routing capabilities including 101xxxx, E911/911/DA/OS and all advanced intelligent network features including call transfer triggers utilized in the same manner as used by the ILEC,^{1/} plus call recording and signaling functions when provided on a local rather than centralized basis.

(ii) An ILEC shall transfer a customer=s local service to a competing carrier within a time period no greater than the interval within which the ILEC currently transfers end users between interexchange

^{39/} Many of the AIN capabilities already must be made available to competing enhanced service providers.

carriers, if such transfer requires only a change in the ILEC's software;

(3) **Tandem Switching Capability:** The tandem switching capability network element is defined as:

- (i) **trunk-connection facilities, including but not limited to the connection between trunk termination at a cross-connect panel and a switch trunk card;**
- (ii) **the basic switching function of connecting trunks to trunks; and**
- (iii) **the functions that are centralized in tandem switches (as distinguished from separate end-office switches), including but not limited to call recording, the routing of calls to operator services, and signaling conversion features.**

(4) **Packet Switching Capability:** The packet switching capability network element is defined as:

- (i) **Packet switching capability: a computer controlled device that routes digital information structured in cells or packets from an input source toward a destination utilizing adaptive routing, dynamic bandwidth and multiple protocols. Most packet switches now use ATM or frame relay packet structures without error detection and correction. Earlier packet switches also incorporated error correction techniques.**

4. Signaling and Call-Related Databases

The concept of a public switched telephone network is that each telephone customer can be connected to every other telephone customer seamlessly, regardless of service provider. Very few calls will travel end-to-end on a CLEC's network. Even a pure facilities-based CLEC has to interconnect with the ILEC to terminate its customers' calls made to ILEC customers. To route and bill calls that do not travel end-to-end on its own network, a CLEC must have access to the ILEC's SS7 signaling networks and call-related databases, including the Advanced Intelligent Network (AIN) architecture and service management systems; there are no substitutes.

Declaration of Bernard Ku (AKu Decl.), (attached hereto as Tab 6) & 2. Any CLEC denied

access to any of these will not merely be impaired in its ability to offer competitive local telecommunications services, it will be precluded from doing so. Id.

In its initial Local Competition Order, the Commission spent more than 50 paragraphs discussing access to signaling systems and databases.^{40/} That discussion is both comprehensive and sound.

Signaling

Signaling links are dedicated bi-directional transmission paths carrying messages between switches and signaling networks. Signaling Link Transport is a set of two or four dedicated 56 kbps transmission paths between CLEC-designated Signaling Points of Interconnection and ILEC Signal Transfer Points (ASTPs \equiv). STPs are signaling message switches that interconnect Signaling Links to route signaling messages between switches and call-related databases. STPs also provide access to other network elements connected to the Signaling System 7 (SS7) network, including: (1) ILEC local or tandem switches, (2) Service Control Points (these are databases, as described below), (3) third party local or tandem switches, and (4) third party-provided Service Control Points/Databases. Id. & 3.

Signaling Links, Signaling Transport, and STPs are essential elements of the SS7 network that are used to control the call processing flow of many different types of calls. CLECs must have the same access to these elements as the ILECs have in order to provide end-to-end service comparable to the ILECs. Interexchange carriers and third parties use these same elements to interconnect their networks. Id. & 4.

^{40/} Local Competition Order && 455-459.

CLECs, especially those that use the ILEC=s switch to provide local service, have no option but to obtain these signaling elements from the ILEC. This is because the ILECs= switches are directly interconnected only with the ILECs= own signaling networks and cannot interoperate with multiple signaling networks except through their own signaling networks= mediation. It would be both discriminatory and inefficient to require CLECs to obtain interconnection and access to the call-completion databases through a third party provider, since that third party would have to interconnect in the same fashion as the CLEC. Id. & 5.

Databases

Service Control Points (ASCPs=) are intelligent databases containing customer and/or carrier-specific routing, billing, or service instructions. SCPs are the network elements that provide the functionality for storage of, access to, and manipulation of information required to offer a particular service or capability. Id. & 6. These include the following databases:

- X The Line Information Database (ALIDB=) is a transaction-oriented database accessible through the SS7 network that contains records and billing instructions associated with subscriber line numbers and special billing numbers. LIDB accepts and responds to queries originating on ILEC, CLEC, and third party networks.
- X The Toll Free Number Database provides the functionality necessary for toll free (800 and 888) number services. The Toll Free Number Database translates dialed numbers into POTS numbers or other network routing information, thereby providing routing instructions to the originating network.
- X The Customer Name (ACNAM=) Database contains the customer name associated with a particular telephone number. This database and other databases that store customer information and associate that information with the customer=s telephone number are used to provide Caller ID and related services.
- X The Number Portability Database contains network routing instructions for all numbers that have ported from one service provider=s network to another service provider=s network. Access to this information permits any network that queries a Local Number Portability Database to process and deliver a call to the terminating network on which the ported number resides.

These databases are updated either through an ILEC proprietary interface or through a nationally standardized interface, as described in the Commission's Local Competition Order. Local Competition Order §§ 458, 459.

CLEC access to the AIN databases, ILEC Service Creation Environment, and Service Management System is critical if the CLECs are to develop and deploy new and innovative services. These services require extensive testing to ensure network interoperability, and the testing cannot be duplicated outside the ILEC SCE environment. Ku Decl., Tab 6, & 8.

In its Local Competition Order, the Commission found that requiring entrants to bear the cost of deploying a fully redundant network architecture, including AIN databases and their application software, would constitute a significant barrier to market entry. Local Competition Order § 489. The Commission concluded that elimination of that barrier created a public policy benefit that outweighed the potential harm of any disincentive for ILECs to develop new and advanced services using AIN if the CLECs were provided access to the ILECs' software applications that reside in the AIN databases. The Commission proposed revisiting this issue in the future when competition may reduce the incumbent LEC's control over bottleneck facilities and increase the importance of innovation. Id. In the two-and-a-half years since the first order was released, competition has not developed sufficiently to modify the calculus of this public policy tradeoff. The ILECs still enjoy control over bottleneck facilities. Moreover, CLECs continue to have the incentive to develop their own new and advanced services, rather than relying on ILEC services, but their ability to do so would be stifled if they were first required to develop their own AIN capability. Also, ILECs have not demonstrated that they actually have been discouraged from developing unique and innovative AIN-supported services.

Commission rule 51.319(e), based on substantial evidence relating to impairment, required ILECs to provide CLECs unbundled access on parity with the ILECs' access to signaling networks (including, but not limited to, signaling links and signaling transfer points), to call-related databases (including, but not limited to, LIDB, Toll Free Database, downstream number portability databases, and AIN databases), to the information necessary to enter correctly, or format for entry, the information relevant for input into ILEC SMSs, and to design, create, test, and deploy AIN-based services at the SMS, through a service creation environment. MCI WorldCom proposes maintaining the provisions of this rule with one exception. Rule 51.319(2)(ii) should be modified by adding the Customer Name Database and related databases to the list of databases to which CLECs should have access.

E. Transport

Interoffice transport provides the transmission links among and between both ILEC and CLEC switches. Transport can be dedicated to a single carrier or shared by carriers. Transport is characterized by substantial economies of scale, and competitive transport facilities can at this time only be provided profitably where large traffic volumes can be aggregated and delivered from one point to another, and where distances are not great. See Bryant Decl., Tab 3, && 11, 14.

A CLEC's transport needs will depend on whether or not it is using its own switch. If a CLEC is using its own switch, it will need dedicated transport to provide all links between ILEC end offices and the networks of other carriers, including the CLEC's own network.^{41/} If the CLEC uses the ILEC switch (typically as part of the UNE platform), it will need access to shared transport to complete calls in the same fashion as the ILEC does. Wimmer Decl., Tab 4, & 24.

^{41/} The Commission's transport rules require that these links be dedicated, not shared. 47 C.F.R. §§ 51.319(d)(1)(i), (ii).

As explained below, without access to both shared and dedicated transport, MCI WorldCom=s ability to offer ubiquitous competitive local exchange services would necessarily be impaired.

Shared Transport. To provide local service to a customer using ILEC loops and switching (and particularly when using the ILEC UNE platform), unless a CLEC has access to unbundled shared transport, it would have to either build or lease dedicated transport circuits to duplicate the entire ILEC local transport network. The need to duplicate such an extensive network just to begin to offer service would constitute an insuperable barrier to entry. Id. & 25.

The cost of constructing X or even leasing X dedicated facilities to end offices where a new entrant has few customers is prohibitive. Shared transport permits CLECs to take advantage of some of the ILEC=s economies of scale and density. Until CLECs are able to generate sufficient volumes of traffic X and in many locations they may never be able to do so X shared transport is much more efficient than dedicated transport. Id. & 26.

Moreover, there are no competitive alternatives to ILEC shared transport, and there are not likely to be alternatives in the foreseeable future. The ILEC, in its historic position as the monopoly provider of local exchange and exchange access service, has constructed an ubiquitous transport network. It has much better information on the traffic flows (and hence transport needs) of all the carriers in a market than will any other carrier, and also frequently enjoy superior access to rights of way. Moreover, ILECs will not likely want or need to share CLEC facilities, and total CLEC traffic may not be sufficient to justify investment by even one CLEC in a shared facility. For the foreseeable future there are not likely to be alternatives to shared transport. Id. & 27.

Finally, even where there is sufficient demand along a particular route for dedicated transport to be cost effective, shared transport still is necessary for competitors, as it provides the

most efficient way to handle peak traffic loads. ILECs themselves optimize their traffic transport by determining the optimal size of their dedicated trunks and sending peak traffic over shared facilities. If CLECs were denied the same access to shared transport for their peak traffic overflow, they would be placed at a significant cost disadvantage that would impair their ability to competitively provide services they seek to offer. Id. & 28.

The Commission has long recognized the need for all carriers to have the same access to shared transport for interexchange competition to develop. The same is true for local competition.

Dedicated Transport. When CLECs deploy their own switches, they need dedicated transport for all links between ILEC end offices and the networks of other carriers, including the CLEC=s own network. FCC rules do not allow CLECs to use shared transport for these links. If the CLEC=s traffic volume between two ILEC end offices increases sufficiently, CLECs may also find it more efficient to use dedicated rather than shared transport between those ILEC end offices. Id. & 29.

In the vast majority of cases in which competitors might need dedicated transport, the ILEC is the only source for that transport. ILEC claims notwithstanding, there currently are few competitive alternatives for most dedicated transport routes. Alternative providers have focused their investments on one type of link X the Aentrance facility≡ between a CLEC switch and an ILEC end office. However, there are very few alternatives available for the Achannel mileage≡ or Ainteroffice mileage≡ link between the ILEC end office and the ILEC end office serving a CLEC customer. Id. & 30.

MCI WorldCom is committed to using alternatives to the ILECs for its transport needs wherever possible. Wherever feasible, MCI WorldCom selects transport from an alternative provider.^{42/} We therefore track very closely the availability of alternative providers. Our records show that we can self-provision transport to just over 400 ILEC end offices, though in many or most of these cases we still require ILEC multiplexing. We also can purchase transport from other CLECs and CAPs to reach approximately 1,200 additional ILEC end offices, again often requiring ILEC multiplexing. Almost a quarter of the CLEC and CAP transport facilities are in the New York, Los Angeles, and Chicago LATAs, but even in these LATAs, alternatives exist for only a minority of ILEC end offices. Wimmer Decl., Tab 4, & 31.

^{42/} See Affidavit of Wayne Rehberger, attached at Appendix B to MCI WorldCom, Inc. comment (filed Oct. 26, 1998) in CC Docket No. 96-262 et al.

There are, then, a few locations in which MCI WorldCom and other CLECs would not be impaired if they were denied access to ILEC transport as an unbundled network element.^{43/}

However, the case against attempting to define these locations in a regulation, or providing for a case-by-case unbundling of transport, is overwhelming. First, as set out above, the record establishes that MCI WorldCom, and no doubt other CLECs, will lease transport from non-ILEC sources whenever it can. Thus, as to transport there is record evidence for what is true generally

^{43/} Of course there are also locations in which CLECs can purchase access service from ILECs as an alternative to leasing unbundled transport from the ILEC, and in a few of these locations the price of the access service (though considerably higher than a cost-based rate for comparable transport), still enables the CLECs to use the service profitably as part of a facilities-based offering. But that is both factually unimportant and legally irrelevant. It has limited factual significance because there are only a very few markets in which CLECs can compete using elements purchased at non-cost based rates. It is legally irrelevant because the statutory question the Commission must answer when it determines whether to unbundle an element is whether the CLEC is impaired if it cannot obtain the element from the ILEC; if the answer to that question is Ayes,≡ it is of no relevance that the CLEC would not be impaired because it can obtain the element from the ILEC, but not as an element, and not at a cost-based rate. Were it otherwise, ILECs could avoid all of the Act=s unbundling and pricing provisions through the simple device of offering as a Aservice≡ at a rate that was inflated but not prohibitive (if the rate were too high to permit CLECs to compete profitably, their competitiveness would be impaired) elements which they otherwise would be required to unbundle.

X there is little need for regulation that protects against unnecessary leasing, and there is no harm in a regulation that is marginally overinclusive.

On the other hand, there would be great harm in a regulation that gave ILECs the right on a case-by-case basis to deny competitors access to their transport at cost-based rates, because they would deny leasing rights in those places in which CLECs need it most. There is no single threshold above which dedicated transport is cost-effective. The threshold level of traffic may vary tremendously between different routes because a multitude of factors besides volume of traffic determines whether it is cost-effective for a CLEC to construct its own transport. For example, the costs may vary enormously depending on whether rights of way are available, how expensive they cost, and how direct they are. Thus a rule that attempted to limit CLEC access to ILEC shared transport to those links that carry less than a specific level of traffic per appropriate unit of time would be too simplistic and subject to disputes that would delay competition.

The ILECs of course are in the best position know where CLECs have chosen alternative providers, because they will not have CLEC business in those locations. They also will know where alternative transport exists, since it will be connected to their networks. When faced with competition, they want CLEC transport business wherever possible. ILECs will not want CLEC transport business, however, if CLECs cannot self-provide or buy transport from another CLEC, because ILECs would rather keep the retail customer and lose the wholesale transport business. All this being so, if ILECs were given the discretion to choose where they will provide cost-based transport, they would have no incentive to deny CLECs service where there are alternatives of equal quality for CLECs to turn to. Wimmer Decl., Tab 4, & 32. Rather, they would choose to deny CLECs transport where CLECs do not have other options. This would be fatal to the

prospects for facilities-based competition. As a practical matter, CLECs would be unable to obtain unbundled access to the loops of customers located in the majority of ILEC end offices.

Nor are there likely to be alternative sources for dedicated transport in many of the locations in which there is no dedicated transport today. Even as the public switched network evolves to incorporate the facilities of new entrants as well as incumbents, the location of transport links will be determined largely by the location of incumbent switches, and it will be the incumbent who will be in the best position to provide dedicated transport facilities between these nodes. The incumbent also enjoys historical access to rights of way not always available to others, or not available on equally favorable terms. Accordingly, even if CLECs win enough traffic to support dedicated transport, they will not necessarily be able to build out their own transport facilities. Id. & 33.

In sum, ILECs should be required to provide CLECs access to their unbundled transport.

The existing definitions of transport have survived much judicial scrutiny and provide sound definitions of the elements the Commission must now decide whether to make available on an unbundled basis. As the existing definitions make clear, transport is the means of transmission between two transport access points. The transmission must carry or be capable of carrying varying degrees of bandwidth, as specified by the CLEC, subject to any technological limitations of the of underlying loop technology.

Transport access points are physical or logical points at which the transmission is connected to a CLEC network or to other ILEC network elements. Transport access points can be at multiplexers (which should be included as part of the transport definition), at digital cross connects, at ports on digital loop carrier systems, or at trunk ports on switches. The CLEC must specify the transport access points when ordering transport.

Transport includes all equipment necessary to carry traffic, including digital loop carrier (when used as part of transport), multiplexing equipment, and fiber optic terminals. Transport must be either capable of carrying specific bandwidth X as in the case of dark fiber X or must actually carry specific bandwidth (for example, DS-1 level transport). The CLEC must specify the bandwidth when ordering transport.

F. Operations Support Systems

Operations Support Systems (AOSS \equiv) consist of all the manual, computerized, and automated systems, together with associated business processes, needed to pre-order, order, provision, maintain and repair, and bill retail or wholesale telecommunications services or unbundled network elements. These systems, and the up-to-date data maintained in them, are needed by ILECs and CLECs alike to serve customers in a timely, efficient, and accurate fashion.

Declaration of John Sivori (ASivori Decl. \equiv), (attached hereto as Tab 7) & 2.

For years the ILECs have used highly complex automated OSS systems to manage successfully their own internal processes and customer interactions, minimizing the need to undertake manual activities, and thereby substantially reducing both labor costs and the time required to perform a function. These well-tested systems ensure, for example, that ILEC customer service representatives have immediate real-time access to all information necessary to respond fully and correctly to customer queries about such things as the variety and prices of services available, or the status of repair calls. They also ensure, among other things, that ILEC retail customer orders are correctly processed and that bills are timely, complete, and accurate. Id. & 3.

CLECs need access to the ILECs= OSS, whether they are reselling ILEC products, leasing unbundled elements from the ILECs= network, or simply interconnecting to the ILECs=

network. As the Commission found in its Local Competition Order, OSS should be unbundled not only as a network element in its own right, but also because it is essential to the provision of all other network elements. Sivori Decl., Tab 7, & 6. CLECs are entitled to access to the ILECs' OSS under any conceivable standard.^{44/} The Commission's finding in its First Report and Order requiring the unbundling of OSS was cited by the Supreme Court as supported by a higher standard of the sort that the Court determined was required by the Act. Iowa Utils. Bd., 119 S. Ct. at 736 (citing Local Competition Order && 521-522). The Commission consistently has found that nondiscriminatory access to these systems, databases, and personnel is integral to the ability of competing carriers to enter the local exchange market and compete with the incumbent LEC. Memorandum Opinion and Order, In re Application of BellSouth Corp., BellSouth Telecommunications, Inc. and Bell South Long Distance, Inc. for Provision of In-region Services in Louisiana, CC Docket 98-121, FCC 98-271, & 83 (rel. Oct. 13, 1998). Indeed, CLECs are entitled to access to OSS not only as a UNE in and of itself but also to make access to other UNEs possible. Sivori Decl., Tab 7, & 6.

Almost all ILEC OSS systems today are inadequate to handle basic CLEC needs. Id. & 4. For example, in most cases CLECs have no access or only inferior access to the ILEC OSS with the pre-ordering information needed at initial customer contact. Thus CLECs cannot give their prospective customers the kind of basic information about services that ILECs routinely provide.

^{44/} An OSS interface must operate as a shared interface between the more private back-end systems of the ILEC, on one side of the interface, and the CLECs on the other side. The interface should meet a uniform industry standard and by its very nature is not proprietary (though even if it were it would inherently meet any conceivable standard of a necessary one). Without industry-standard OSS, CLECs would have to develop separate OSS systems in every state in which they enter a requirement that has proven to be a substantial barrier to entry.

This introduces errors, causes delays and uncertainty that both discourage customers from choosing a CLEC and undermine CLEC marketing campaigns, and creates a negative image for customers, all of which inflate CLECs' customer acquisition costs. Even where ILECs have adequate OSS in place, they typically have chosen to deploy proprietary systems rather than follow industry standards, thus imposing millions of dollars in up-front costs in each region on national CLECs who are forced to develop unique interfaces for each proprietary ILEC system rather than a single standardized interface. Id. §§ 4-6.

For CLECs requiring ILEC unbundled network elements or resold retail services to provide local services, there is no substitute for the ILECs' information on their own unbundled network elements and retail services. See Iowa Utils. Bd., 119 S. Ct. at 734 (noting that ILECs' OSS contains essential network information). Access to that information can only occur through the ILECs' own OSS. Quite simply, a competitor's ability to provide service using either UNEs or resale is not just impaired, it is eliminated, without access to the ILECs' OSS. Sivori Decl., Tab 7 & 7. ILECs must have appropriate OSS interfaces, back-end systems, and business processes in place and fully operational. Id. §§ 9-30. They also must provide accurate and reliable documentation for their OSS so that CLECs can actually build and use the interfaces. In addition, ILECs must conduct comprehensive carrier-to-carrier testing of the interfaces before they are put into production, as well as adhere to reasonable change control procedures that maintain the reliability of the OSS interfaces while enhancing their capabilities. Finally, ILECs must provide adequate training to its employees and sufficient support for CLECs attempting to implement and use the interfaces. Overall, the ILECs' OSS must be operationally ready to support commercial volumes of traffic.

MCI WorldCom recommends that Rules cover the following:

- X Operations Support Systems (OSS) consist of all the manual, computerized, and automated systems, together with associated business processes and the up-to-date data maintained in those systems, needed to pre-order, order, provision, maintain and repair, and bill retail or wholesale telecommunications services or unbundled network elements.
- X ILECs must provide CLECs nondiscriminatory access to their OSS. In order to do so, ILECs must provide CLECs parity relative to their own access, for pre-ordering, ordering, provisioning, maintenance and repair, and billing across five dimensions: scope of information available, accuracy of information supplied, timeliness of communication, reliability of access, and uniform standards-based interfaces.
- X ILEC OSS must meet performance standards that measures whether CLECs have access to these OSS on parity with the ILEC=s access. Those performance standards must address quantitative measurements and qualitative measurements and must be applied to actual market situations. Failure to satisfy performance standards should automatically trigger a process to identify and correct the root cause of the problem.

G. Directory Assistance and Operator Services

Customers of basic local telecommunications service require access to operator services (AOS≡) and to complete and accurate directory assistance (ADA≡) regardless of their choice of service provider. If a customer does not have access to an operator or to directory assistance, if the call operator is unable to complete a call, or if the DA operator is unable to provide a listed number or provides an incorrect telephone number, the customer will immediately know of the failure and will have an immediate negative impression of its service provider. Any provider who is unable to provide operator services and accurate and complete directory assistance therefore will be impaired in its ability to offer local service competitively. Declaration of Stuart Miller (AMiller Decl.≡) (attached hereto as Tab 8) && 10-14.

To provide the necessary OS and DA services to its customers free of impairment by ILECs, three terms and conditions on access to OS and DA network elements are essential:

ILECs must provide, at least for the time-being, access to their OS and DA platforms on an unbundled basis; ILECs must provide nondiscriminatory access to their DA data in bulk rather than by database dip; and, finally, ILECs must provide customized routing that enables CLECs to route their customers' calls to their own OS and DA platforms.

Because customers are so sensitive to OS and DA quality, MCI WorldCom prefers to provide these services itself, with minimal reliance on the ILEC, wherever it is feasible to do so. Three things often make this impossible in today's market. First, restrictions on access to the ILECs' DA databases have limited our ability to provide these services and have forced us to rely on the ILECs' rebranded services. Second, MCI WorldCom's inability (and the inability of all other CLECs but AT&T) to interconnect our OS/DA platforms with the ILECs' switching through customized routing often makes it impossible for us to use our own platforms, even when we have nondiscriminatory access to the ILECs' DA databases. And, finally, as with other network elements, CLECs must attain minimum threshold traffic levels for it to be economically feasible for them to provide their own operator and DA services. Id. & 4.

1. **DA Databases.** A CLEC that has deployed its own switch can deploy its own DA platform to provide directory assistance to its customers served by that switch, but it can provide the complete and accurate directory assistance its customers demand *only if* it has access to the ILECs' DA databases. CLECs will always need unbundled access to this critical data. Id. & 6.

In particular, CLECs must have access to ILECs' DA data in bulk, as opposed to on a query-by-query basis, if they are to provide competitive directory assistance services. Id. & 7. Many ILECs, including Bell Atlantic, SBC, and SNET, have attempted to provide DA data through a service that requires CLECs to query the ILEC database each time a customer requests

a listing. That option is unacceptable for MCI WorldCom and many other CLECs. It would require the CLEC to develop or purchase a directory assistance system that is compatible with the ILEC system. Then, if an ILEC decided to change its system, the CLEC would again be forced to acquire a new system or upgrade its existing system. Id. && 7-8. Moreover, any innovation on the part of the CLEC would be stifled: if the CLEC created new search strategies or services based on its existing directory assistance system, it would be held hostage to the ILEC performing the same development. If the CLEC were forced to share its plans for new services with the ILEC, any competitive advantage would be lost. For these reasons, it is essential that CLECs obtain unbundled access to ILECs= DA databases in bulk, not on a query-by-query basis.

Accurate and complete DA databases are not available from other sources. Other sources must rely on old ILEC white pages listings, which quickly become dated and error-riddled. Data from non-ILEC sources tend to have twice as many inaccuracies, as well as being far less complete. Id. && 10-13. As a result, despite MCI WorldCom=s strong preference for providing customers served on our own switches our own DA service, we have made the market-driven decision not to do so unless we have access to complete bulk ILEC DA data at cost-based rates.

2. OS/DA Platforms. Unbundled access to directory assistance databases is not enough to keep CLECs from being impaired in their ability to offer local service. MCI WorldCom would like to provide its own operator and directory assistance services in all situations, but technical limitations often make that impossible, even where it has adequate access to the databases. Therefore, CLECs also need access to the full ILEC OS/DA platforms. Id. & 14-17.

When a CLEC provides local service using an ILEC switch, an operator or directory assistance call must be routed to the CLEC platform from the ILEC switch. Unfortunately, the

ILECs do not provide customized routing using a protocol that CLEC networks (with the exception of AT&T's) are equipped to handle. Rather, the ILECs have insisted on using an outdated mass signaling protocol that is inconsistent with new technology. As a result, MCI WorldCom and other CLECs are forced to use the ILECs' operator and DA services despite the existence of their own OS/DA platforms.

It is extremely costly for a CLEC to modify its existing operator platform to accommodate an outdated customized routing protocol, and that expense is unnecessary when there is another protocol available that can meet the CLEC's needs and that already is being used to route traffic between the ILEC switch and other carriers. Id. §§ 15-16. CLECs currently use the equal access Feature Group D (AFGD) signaling protocol to route long distance calls to IXC networks. Particularly for those CLECs that also have long distance networks, use of FGD to route the CLEC customers' OS and DA calls from the ILEC switch to the CLEC's OS/DA platforms would eliminate the large and unnecessary up-front costs associated with deploying a new customized operator platform.

With the use of FGD routing, MCI WorldCom could use its OS/DA platforms to provide these services to customers currently served by the ILEC switch. But the ILECs refuse to program their switches to allow FGD routing to CLEC OS and DA platforms. Because of this, CLECs that are not using their own switch (other than AT&T) are unable to provide their own operator and directory assistance services. Id. § 17.

Even if this customized routing issue is resolved, however, CLECs will need access to ILEC OS/DA platforms. For CLECs with very small market penetration, the unit costs of constructing their own OS/DA platforms and of transporting small levels of traffic back to these platforms will so far exceed those of an ILEC with large market penetration that, even if ILECs

offered customized routing using a signaling protocol that the CLEC networks are equipped to handle, it would not be feasible for the CLEC to provide its own OS/DA services. In these cases as well, the CLECs= ability to provide local service would be impaired if they did not have access to the ILECs= platforms. Id. & 18.

MCI WorldCom recommends that Rules cover the following:

- X Each ILEC shall provide CLECs access to the bulk directory assistance database, updated as frequently as it updates the data it maintains for itself or provides to other ILECs, in a readily usable format.
- X At least until ILECs can provide customized routing of operator and directory calls to the CLEC=s platform with a signaling protocol usable by the CLEC, each ILEC shall provide CLECs unbundled access to operator services and directory assistance services and facilities where technically feasible.
- X ILECs should be required to condition their networks to provide FGD signaling to CLECs so that CLECs can make use of their own OS/DA platforms.